THE CHEMIST AND DRUGGIST

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Editorial Notes.

THE United Society of Chemists and Druggists seems to have as many lives as a cat. In the course of its eventful history it has been brought to death's door by atrophy, by internal disorders, and by the malpractice of its physicians. Yet it still lives. We really thought that it had died from the effects of its recent convulsions, and that there was nothing left for us but to bury it decently. We were mistaken. Like all creatures of low organisation, it is wonderfully tenacious of life. When one head is cut off another is developed, and the mischief resulting from disruption is rapidly repaired. From the report, which we print with some reluctance, our readers will learn that Mr. BUOTT has formed another Executive Committee, and has succeeded in inducing a very worthy member of the trade to accept the office of President. With this "scratch company" the energetic manager will doubtless produce a new sensational drama at the earliest opportunity; ~~but seeing that~~ there is now no Benevolent Fund, and that Parliament has disposed of the great question of pharmaceutical legislation, we fear that he will have some difficulty in hitting upon a good plot. We may be quite sure, however, that there will be abundant talk, if but little action, in the new piece, and that there will be no lack of thunder.

ASSISTANTS under age at the time of the passing of the Pharmacy Act, complain of the supposed hardship of having to pass a proper examination before commencing business on their own account. We cannot regard them as injured persons, and we think that Parliament very wisely drew the line of special exemption at *full age*. The great object of the Act is to secure for the public the services of a properly-qualified body of pharmaceutists, and the attainment of that object would be deferred too long, if the modified examination had been opened to all the youngsters of the profession. The minor examination of the Pharmaceutical Society is not a very dreadful ordeal, and no young man under the age of twenty-one ought to shrink from the small amount of study needed to prepare himself for it, especially as the knowledge he will thus gain may be turned to good account in his business.

WE have much pleasure in calling attention to the report of the proceedings relative to the proposed "Sandford Testimonial." Those who have watched the movement which has given us the new Pharmacy Act, know that the President of the Pharmaceutical Society has always been in the front, and that his courteous attention to the representations of his brother tradesmen removed difficulties of no small magnitude. We trust that the chemists and druggists generally, for whom he has so earnestly laboured, will show that they properly appreciate his services, by contributing to the fund raised to commemorate them.

POOR Paterfamilias is always being swindled by one designing rogue or another. The last attempt on his pockets has been made by a certain Holywell-street bookseller, who has bought up the remainder of the 1864 edition of the "British Pharmacopœia," which he has rebound, and labelled invitingly on the back "British Pharmacopœia and Family Physician." We can imagine the unfortunate purchaser's perplexity the first time he refers to its pages for a remedy for infantile diarrhœa or adult indigestion. *Caveat emptor*, of course, but we really think the Medical Council should take care into whose hands they allow their old stock to get.

ON Tuesday last, a servant girl was brought before Mr. FLOWERS, at Bow-street Police court, charged with having attempted to poison herself with "red precipitate." The worthy magistrate improved the occasion by explaining the provisions of the Pharmacy Act respecting the registration of sales of poisons. He remarked that the chemist and druggist who had sold the poison had not complied with the conditions laid down, and had rendered himself liable to a heavy fine. We need not remind our readers that "red precipitate" is not deemed a poison within the meaning of the Act, and that consequently Mr. FLOWERS preached his sermon at the wrong time.

THE present number of the CHEMIST AND DRUGGIST contains 32 pages of literary matter in the place of 24 which has hitherto been the space at our disposal. We are glad to inform our subscribers that this will be a permanent increase, and one which will give us a better opportunity of making the Journal still more worthy of the confidence which is placed in it as the organ of the chemists and druggists.

THE OPENING OF THE SESSION 1868-9.

17, BLOOMSBURY SQUARE.

ON Wednesday evening, October the 7th, the Pharmaceutical Society entered on a new phase of organisation. It was the first public gathering since its proceedings had received that promise of legislative sanction which the coming year will formally confirm. An unusually large audience marked the importance of the occasion. Some were attracted by the knowledge that the President, Mr. George Webb Sandford, whom many the night before had met to honour, would occupy the chair, and award the prizes gained; others came out of sheer curiosity, anxious to see the ladies, who in obedience to the laws of advancing civilisation were admitted; more attended rejoicing that the timid counsel, born of ignorance, which had so long shut out the London student from the sacred influence of home was upset for ever; nor were there wanting those to whom the name of the lecturer of the evening was accepted as a pledge of excellent work certain to be redeemed. Passing over the preamble—we mean the tea and coffee,—we may just observe that the *Provisional* Committee forgot that there was another thirst besides that for mental improvement. Mrs. Hubbard on gaining the refreshment room found the cupboard in its normal historical condition. More than three hundred visitors crowded into the narrow theatre, which was built apparently with special reference to inconvenience.

After a few words of welcome from Mr. Sandford, the various reports relating to the studies of the past session were read by Professors Redwood, Bentley and Attfield, that from the Board of Examiners being communicated by Mr. Sugden Evans.

The Prize List is here subjoined.

THE PEREIRA MEDAL (Major Examination) Frank Harwood Lescher.

THE PRIZE OF BOOKS (Minor Examination) Matthew Henry Stiles.

LECTURES.

CHEMISTRY AND PHARMACY.

MEDAL	John Moss.
"	Alfred Neobard Palmer.
CERTIFICATE OF HONOUR ...	John Thomas Ward Wallis.

BOTANY AND MATERIA MEDICA.

MEDAL	John Moss.
CERTIFICATE OF HONOUR ...	James Deane.
CERTIFICATE OF MERIT ...	John Thomas Ward Wallis.

The Professor of Botany reported on the Herbaria received in competition for the Botanical Prize.

The following awards were made:—

BRONZE MEDAL	Washington Gimblett.
CERTIFICATE OF HONOUR	Martin Luther Clift.
CERTIFICATE OF MERIT	Joseph Butten.

LABORATORY.

PRACTICAL CHEMISTRY.

MEDAL	William Arkinstall.
CERTIFICATE OF HONOUR... ...	Alfred Franklin.
" "	Alfred Neobard Palmer.

JACOB BELL SCHOLARSHIPS.

SENIOR	John Moss.
JUNIOR	John Ingham.

Let us hope that hereafter successful candidates will omit those post-prizeal discourses, which, prompted though they be by gratitude, are singularly ill-timed.

Not without deep consideration did the Council venture on the experiment of an Introductory Address. It was felt that the higher position in which the Society was placed linked special duties to increased advantage, and that it behoved those to whom was entrusted the care of rising pharmaceutists, both officially to extend the hand of welcome, and to tell them clearly and lovingly how best they might enter on their career.

Mr. Henry Bowman Brady rose equal to the emergency, and how well he performed his task the address itself will show. The first thing in its pages that arrests the notice of the reader is the mechanical beauty of their composition: not hastily were these sentences constructed—the thought is noble, while the music of the wording lends an added charm. We have no wish to dilute Mr. Brady's admonitions with any weak words of ours, but we must record the attention with which they were received. Whether the lecturer urged systematic study, or warned his youthful hearers against surface work, or in reiterated appeals bade them take for their watchword "THOROUGH," no passage fell upon a listless ear. "It has often been said" (for we must indulge in one short extract), "and it cannot be too often repeated, that 'there is no royal road to knowledge.' Truly there is no smooth highway, and the many tempting byeways that diverge from the straight course, green, sunny, and seductive, that promise to lead to the same goal, soon show, though winding and deceptive and not easily traced, that to whatever end they do lead it is not the one desired. You may know them only by one fact, they always tend, just a little, downwards." We doubt, however, whether the cause of steady persistence is strengthened by Richter's moral reflection:—"Regularity is unity, unity is Godlike, only the Devil is changeable." We believe that the gentleman in black is neither changeable nor deficient in perseverance. Personally speaking, since the period when in our nursery there was a folio illustrated Milton, neither a German mystic, nor an eclectic pharmaceutist will drive us from the conviction that his sable majesty retains both horns and hoofs—give him his due—a want of sustained energy is not to be included amongst his catalogue of faults. We are afraid to transgress the limits of our space, yet we dare not pass over in silence the last important subject, namely, the right use of leisure. Here we come upon the speaker in his full strength—he does not sermonise about recreation, rather he leaves it to the manly sense of right and wrong possessed by every honourable and intelligent student. London has its great temptations, but they may be resisted, and a share of innocent amusement will do no harm. There remains a surplus residue of time which though not directly claimed by technical study may wisely be refused to pleasure; rationally employed, it may in itself become the truest relaxation.

Two modes were indicated, literature being suggested first:—"As far as opportunities permit, cultivate a taste for literature and general science. A fair knowledge of our English classics, is, at the present day, almost essential to any one laying any claim to respectable education, and assuredly there is no mental training, except the direct observation of the works of God, that is at once so varied, so ennobling, and so instructive, as that to be derived from the writings bequeathed to us by the great men whose inner life they portray." Devoutly do we wish that a Fellow of the Linnean had swum into the broader waters and left out his restrictive adjective—"English." In these days, when sundry of our brethren lament the want of social status, it is well to hint that the remedy rests in their own hands, and they may sometimes be reminded of the advice that Wesley, the dying musician, gave his son—"stick to thy Latin and Greek—recollect all the Wesleys were gentlemen."

The pursuit of any branch of Natural Science was next recommended. How such intellectual avocations fill up and crown the golden hours which must otherwise be lost; how they lead their votary, not in mere poetic phrase, but in reality, to joys which are ever new, and pure as they are ennobling; how, lastly, effluent in blessing, they bestow a peace which like the highest, passeth understanding, Mr. Brady's exposition will unfold.

Report
ON THE CONDITION AND PRACTICES
OF THE
VARIOUS CLASSES CONNECTED WITH
The Drug Trade.

VII. THE PHARMACIST OF THE FUTURE.

WHEN we were penning the first lines of these articles, we had but little cause to hope that before they were completed, a Pharmacy Bill, conferring a high scientific status on the hitherto much despised chemist and druggist, would have received the sanction of both Houses of Legislature. We felt almost certain that the Irish Church, the compound householder, borough boundaries, Abyssinia, and other Parliamentary nuisances, would have left our lawgivers but little time or will to consider whether Her Majesty's subjects should still continue to run the risk of being poisoned by an army of ignorant pretenders to pharmaceutical knowledge.

The science of pharmacy has at last received acknowledgment from the State, and its professors are now removed by the law of the land from the category of mere traders in drugs and chemicals. The future of pharmacy in these realms will now be a glorious one, for in spite of our having hitherto been considered as nothing better than tradesmen and shopkeepers, we have somehow or other managed to produce a body of pharmacologists that will compare most favourably, both in worth and numbers, with those of France, Germany, and America. Such being the case during the period in which any ignorant huckster could set up a "chemist's shop," what may we not expect now that every pharmacist must be, to some extent, an educated gentleman?

The new Act has not been passed one day too soon, for we have good reason to know from the answers we receive to our questions in our "Corner for Students," that an entirely new race of pharmacists is springing up—men of talent and intellect, full of enthusiasm and hard work, who seem to be just ready to take every advantage of the present juncture. We know, too, from other sources, with what satisfaction this measure has been hailed by the students of to-day, who differ as much in ability and education from the student of twenty years ago, as the pharmacist of 1888 will from some of the oilmen-chemists and grocer-druggists that now disgrace our ranks.

In our former articles, we have more particularly addressed ourselves to those portions of our readers who are already established in good positions. In the present article, we desire more especially to engage the attention of our student friends, of those, in fact, who will be the "pharmacists of the future."

The position of the British pharmacist has long been a source of wonder to his continental brethren. The French *pharmacien*, who boasts of a status only inferior to that of the medical man, cannot understand how it could have happened that the State, and, indeed, society generally, have so long looked upon such men as John Eliot Howard, Daniel Hanbury, H. B. Brady, Henry Deane, W. W. Stoddart, G. F. Schacht, and a host of others as mere traders and shopkeepers. They point proudly to their Robiquets, Soubeirans, and Delondres, and ask if they would receive as little recognition as men of science as the gentlemen we have named, had they belonged to England instead of to France. But this disgraceful state of things will now end, the Act just passed will speedily bear fruit, and we shall hear no more exclamations of surprise from our foreign friends.

The commencement of the new and improved order of things is undoubtedly due to the praiseworthy and successful exertions of Jacob Bell—*præclarum et venerabile nomen*—and his able coadjutors at Bloomsbury-square, and the only fault to be attributed to their equally able successors has been a suspicion of aristocratic exclusiveness, and a hankering after the high and dry. The foundation, however, of the Pharmaceutical Conference brought men of all shades of opinion together, and both parties found, to their mutual astonishment, that their opponents were not such terrible or unreasonable people after all. Differences were arranged, misunderstandings were cleared up, friendships were formed, and when the meetings were ended, glasses were emptied, cigars were smoked, and songs were sung; and so, by degrees, the whole trade became one in thought and feeling; the two bills of 1866 were soon soldered together, and the result was a measure that, with a little alteration, has since become law.

The pharmacist of the future will have to begin his apprenticeship in a very different position to that of the half-shopboy, half-ragamuffin that only too many pharmacists have been obliged to put up with. A pharmaceutical apprentice should be a well educated lad, well versed in the ordinary requirements of an English education, ~~more~~ especially in arithmetic, every rule of which he ought to have at his finger's ends. It is a common complaint amongst pharmaceutical teachers and examiners that even men of five-and-twenty and thirty, who present themselves for instruction or examination, are utterly incapable of performing the most ordinary arithmetical operations. Latin is, of course, indispensable, but we are hardly of opinion that the pharmaceutical apprentice should have such an extended knowledge of that noble language as to enable him to read and enjoy such authors as Horace and Virgil. The time spent in the acquisition of such knowledge would surely be better applied in learning sufficient French and German to be able to read ordinary pharmacological works in both languages. We take it for granted that the natural tastes that would lead a boy of ordinary intelligence to choose pharmacy as a profession would also induce him to study chemistry, natural philosophy, and botany sufficiently to feel perfectly at home when he came to open his Pereira, his Attfield, or his *British Pharmacopœia*. We know that several first-class houses have made it an absolute rule to refuse apprentices; but we imagine that if a good supply of raw material of the proper kind were presented to them, they would soon waive their objections on this point.

From time to time, we have heard complaints touching the treatment of apprentices by their masters. One great cause of quarrel is long hours; but as this is an evil that is decreasing daily, it will, perhaps, be as well to leave it alone, for the present, at least. The conscientious master will, both for his own sake and his assistant's, afford the latter frequent opportunities for extending his knowledge of pharmacy, whether by private study, the attendance at classes or lectures, or botanical excursions. Some apprentices are too proud to dust bottles, or take their turn at the pestle and mortar; there are others, again, who turn up their noses at the apron. To such proud-souled gentry we feel almost inclined to say, "Cancel your indentures at once, for you are clearly not intended to be a pharmacist of the future." Let them visit the studios of any of our first-rate sculptors, and see what kind of a dress it is they wear, even when they receive royalty; or let them go to John Penn's, Boulton and Watt's, or any other famous engineering firm, and see the sons of peers and baronets working at the forge, the vice, and the hammer in suits of greasy moleskin. They might lately too have seen Prince Arthur working in the trenches at Chatham in his shirt and trousers, with a pick and shovel, without feeling at all degraded by it. Let the proud apprentice remember that the clever pharmacist can only be the result of the hard-working apprentice, who disdains no labour, however low or unintellectual.

As the apprentice nears the end of his time, he ought to be allowed to join the chemists' association of the town or city in which he lives. He will have little difficulty in doing this, for we are delighted to find that gatherings for the reading of papers on chemical and pharmaceutical subjects are being set on foot in most of our large towns, and in many of our little ones. There are few towns of even minor importance that do not boast of three or four chemists' shops, affording at least half-a-dozen students, who, by occa sionally meeting together, will find their knowledge will progress with much greater rapidity than if they studied alone.

Our American friends have long since set us a bright example in the way of encouraging the closest intercommunication among members of the pharmaceutical profession. The American Pharmaceutical Association, established more than twenty years ago by the members of the Colleges of Pharmacy of New York and Philadelphia, has elevated the body of pharmacists in America to a position comparable with that of their French and German brethren. They sought no help from Government, but by means of periodical conferences on scientific and trade matters, held in the various large cities of the Union, together with their numerous published reports, they have succeeded in showing that the American pharmacist, with all his national love of trade, has been able to teach the mother country a few lessons in the way of pursuing science for her own sake. Almost immediately after its establishment, the American Association decided on a set of ethical rules for the guidance of their members in their intercourse with each other and with the public. This excellent code begins by discountenancing all secret remedies and private compacts with the members of the medical profession. It lays down general rules for the adoption of a fixed tariff of prices, where such a proceeding is practicable, and, of course, condemns underselling and dishonourable competition in the strongest terms. It advises as a *sine quâ non* that good drugs only should be dispensed, and that all pharmacists should make the continual examination of every article in their stock a positive duty. It is hardly necessary to say that it counsels a good education, both generally and professionally. It recommends pharmacists to avoid prescribing as much as possible, especially in cases that are likely to become serious. Watchfulness over prescriptions is also enjoined, on the ground that the physician after all is only a man, and consequently not infallible; and it concludes by asking every member of the profession to place the particular knowledge he may gain at the service of his brethren, by means of papers read at meetings, or printed in journals. We might easily enlarge on the recommendations contained in this excellent code, until we filled many pages of our journal; but the question of pharmaceutical ethics has already received such able treatment at the hands of our friend Mr. Ince, in a paper read before the Pharmaceutical Conference at Nottingham in 1866, that it is almost impossible to supplement it in any way.

One of the greatest stumbling-blocks to the conscientious pharmacist is the great difficulty of hitting that exact balance between the trader and the professional man that will afford him the proper quantity of bread and cheese, to say nothing of a certain modicum of beer to wash it down with. As we have said before, the business of a pharmacist is a peculiar mixture of a trade and a profession; in carrying it out, therefore, successfully, he has a very difficult double part to play. It is often urged with great justice that the very qualities necessary to make a good pharmacist, from a professional point of view, are just those that unfit him for keeping a shop. But this objection is, we think, to a certain degree, fallacious. It is unquestionably true that the scientific man is usually a bad financier, and that habits of close study and research tend to diminish the holy hunger for gold, without which there is but little success to be gained at any profession or trade. Books and experiments unquestionably lessen one's ardour for battling with the world, and it is naturally infinitely more agreeable to the studious pharmacist to sit down to the last number of the *Pharmaceutical Journal*, or, may we say, of the CHEMIST AND DRUGGIST, than to devise means for improving his connection, or to fight a long and weary battle with an unprincipled wholesale druggist for supplying him with impure drugs or chemicals. But these little unpleasantnesses are only the thorns on our rose-bush, and are inseparable from every pursuit. We must content ourselves with taking the bitter with the sweet, and now-a-days, alas, it is only too true that a very large portion of the former quality enters into our cup of life before even the cleverest of us can eke out a bare subsistence.

But then, on the other hand, although the pharmacist's education may be supposed to unfit him for commercial pursuits, it must be conceded that it may be made the means of training those very faculties that go to make up a successful trader. Chemistry and physics, for example, will teach him that wholesome incredulity that will lead him to doubt every fact until it is proved, to distrust first appearances, and to believe only in honesty after it has been thoroughly tested. Carlyle says somewhere "that most men are fools," a dictum that is, we fear, abundantly confirmed by the fact of there being so many rogues in the world to profit by their foolishness. The habits of close observation acquired while botanising ought to enable him to become such a thorough judge of human character as to afford him the opportunity of discovering the weak points of his customers' characters, so that he may be all things to all men. The neatness and dexterity acquired during his chemical and pharmaceutical experiments can easily be applied to the vulgarest details of every day trade, and as an educated man, he must have innumerable pleasures and consolations out of business hours that are utterly unknown to his neighbours, the cheesemonger and linen-draper.

The pharmacist must, therefore, be as thoroughly commercial as any other tradesman, not by over-reaching or sharp practice, as it is euphemistically termed now-a-days, but by true business talent. Constant watchfulness over every detail must be the first great quality of the pharmacist of the future; the rest will soon follow in its wake. Neatness, agility, ingenuity, perfect cleanliness, quietness of manner, and the tact that produces that peculiar mixture of politeness, deference, and dignity that make up the gentleman are all easily acquired. There must be no servility, no hand-rubbing, in the style of the linen-draper's shop-walker, no bearishness, under the supposition that eccentricity of manner will bring in customers, and, above all, no laughing at the poor and ignorant. As for the pharmaceutical details of business, we conceive we have little to do with them. Every individua is the best judge of the advisability of manufacturing his own preparations, or of buying them from a wholesale druggist; we may, however, give it as our opinion that, as a rule, there is a little too much "pharmacy made easy" in the world, and that our wholesale friends are not always so accurate in supplying pure preparations as they might be. The shop-fittings, too, must be left to every man's taste; there is a tendency, however, to over-ornamentation that we have lately observed in various establishments that might be checked with great advantage. Too much mahogany and gold leaf is apt to give a pharmacy a strong resemblance to other places of business where non-medicinal draughts are dispensed in large and profitable quantities. We have before said our say touching shop-windows, but we regret to have to repeat that, as a rule, most of them are still simply contemptible.

Counter practice is another of those difficult questions that seem only capable of being decided by each individual, according to local circumstances. The chemist in the neighbourhood of the squares will but seldom be called on to look at a foul tongue, or prescribe for a stomach-ache; but his more humble brother in the Whitechapel-road will find his business almost entirely made up of giving remedies *pro re* *nati.* The more enlightened portion of the medical profession have long seen the necessity for allowing the intelligent pharmacist to prescribe simple remedies in simple cases, and it is only the shopkeeping general practitioners—may their shadows grow less—who rail at us, and call us ignorant dabblers in death-dealing substances, whenever a pharmacist orders a working man to take a dose of castor-oil for a fit of indigestion. Every pharmacist has sufficient judgment to understand where to draw the line, when to mix a simple draught, and when to send his customer to the nearest medical man. When visiting us with their wrath, the medical profession should remember that there are many black sheep in their own ranks, whose diplomas are often merely passports for incompetency, and cloaks for quackery of the most barefaced description.

It is much to be hoped that now that the pharmacist has at last been placed in his proper position with regard to his fellow-men, that the medical profession will throw off some of that pedantic reserve which, we are sorry to say, characterises but too many of its members. Medical men should bear in mind that pharmacy is the true handmaiden to medicine, and the relations between a pharmacist and a physician are somewhat closer than those of an architect and a hodman. They should also remember that a proper understanding between the members of both bodies can only result in great good to the community. Such a union would, we feel sure, be productive of numerous investigations similar to those lately carried on by Dr. Harley, on the action of conium, belladonna and hyoscyamus, and alluded to by Mr. Hanbury in his able address to the Pharmaceutical Conference. A little more intimacy between the two fraternities would make such researches the rule, instead of the exception, as they undoubtedly are at present. The American Pharmaceutical Association, last year, at its fifteenth annual meeting in New York, passed a resolution, inviting the professors of the medical colleges of that city, also the medical profession generally, to take seats at the conferences. This is a wise proceeding on the part of our American brethren, from whom we have much to learn, and one that might be followed with great advantage on this side of the Atlantic. The meetings of the Pharmaceutical Society would certainly be rendered much more valuable by the presence of a fair sprinkling of medical men, who would, we are sure, receive a hearty welcome if their wish to be present were made known to the officers of that society.

In his relations to his own brethren, we are glad to see that the more sensible of our number are daily breaking down the barriers that have hitherto separated us from our fellow-workers. The old-fashioned trader that looked on all the chemists and druggists around him as his natural enemies is fast dying out, and we could name certain fierce rivals who have so far abolished the old system that they not only meet at each other's firesides, but dip their hands into each other's specie jars now and then, and even transfer an assistant for two or three days, in case of illness. All this is as it should be. The less we have of trade-prejudice the better. Of course, there are certain secrets that are inseparable to the carrying on of every business; but there is, luckily, a vast difference between revealing them and cutting a rival dead in the street because he tries to earn his bread by the same means that we do. But these petty jealousies are fast diminishing under the good influence of increased education and more widely-spread gentlemanly feeling, and although it would be futile to hope for their utter extinction, as long as the till forms a necessary adjunct to the pharmacy, we still feel confident that they will be little known to the Pharmacist of the Future.

In conclusion, we cannot do better than call the reader's attention to that fine old motto mentioned by Mr. Ince, in his memorable essay on Pharmaceutical Ethics:—*Pietas, scientia, temperantia, vigilantia, et studium assiduum ornant pharmacopœum.* This motto ought to be hung up in every pharmacy in the world, and the lessons it conveys meditated on continually by the earnest pharmacist. If we had sufficient time and space at our command, we might use it as a text for a lay sermon. The pharmacist of the future must first of all possess that *piety*—using the word in its good old wide sense—which teaches us to love "all things, both great and small;" that *knowledge* of good and evil that makes the honest man; that *temperance* that is the foundation of a healthy life and an honourable business; that *watchfulness* over great and little things that constitutes the successful trader; and, lastly, that unremitting *study* of books, things, and men, that makes a man the bright and shining ornament of a noble profession.

SODA WATER.

MR. Proctor's paper "On Faulty Samples of Soda and Potash Water" has certainly become the sensational paper of the Norwich Pharmaceutical Conference. The facts connected with the manufacture of these waters, elicited by that communication, have been brought very prominently before the public. They are not new to chemists, though we confess ourselves reluctantly obliged to believe that the practice of preparing simple aërated waters, and supplying these under such various misleading titles as the public may require, is rather more general than we had hoped. We have, of course, nothing at all to say against simple aërated waters, as such; at the same time no amount of reasoning will ever convince us of the justice of labelling a bottle "Soda Water" which really contains no appreciable quantity of the alkali at all. The popularity of these beverages with the public and the medical profession has arisen from a general belief in the value of small doses of soda, or potash, combined with carbonic acid gas; and we can hardly consider it honourable to pharmacy that any system of deception or misrepresentation in medicine should be in the slightest degree encouraged. Our contemporary, the *Daily Telegraph*, to which journal no subject ever comes amiss, has devoted a leading article to Soda Water, taking the discussion we have alluded to for its text. The writer, after favouring the world with an elaborate flourish, with quotations from Shakespeare and Byron, and allusions to George the Fourth and Napoleon Bonaparte, more or less appropriate, comes to Mr. Proctor's statement that out of five samples of soda water which he had analysed, not one turned out that which it professed to be "even when the name of the maker might be expected to be a guarantee of its good quality." After this, we are coolly informed that "Mr. Proctor was virtuously indignant without a cause." For our own part, we think Mr. Proctor did well to be angry, and may add that we have received, with much satisfaction, private communications from several of the most eminent manufacturers, assuring us that in their cases, at least, each bottle which they label Soda Water does contain 15 grains of the alkali. We do not propose at this moment to mention any names, but we may add that the popularity of the waters which we know do contain this amount of carbonate of soda, is a sufficient proof that it is not always the case that "the public have a very marked aversion to the flavour of soda in their aërated drinks." The fact is, as we all know, that genuine Soda Water requires great care and cleanliness in its manufacture, and, above all, it is essential that pure natural water should be employed. Those are the points which our greatest manufacturers have attended to, and with 15 grains of carbonate of soda in each bottle, we are not aware—and we have purposely tasted some—of any flavour of soap-suds, or any other flavour than a most agreeable one. Why the flavour of soap should have been specially pointed out we cannot understand. To produce that, we imagine caustic alkalies would have to be used, or the water must contain oily impurities, to which, with all its faults, it is surely little liable. We leave the subject now, but shall be glad to have further communications on either side; and we hope some good may result from the publicity which has arisen respecting this matter.

HOMŒOPATHIC PHARMACY.

In our last number we briefly reported the meeting of homœopathic physicians and chemists, called together to discuss the effect of the new Pharmacy Act upon the practice of Homœopathy. We now return to the same subject, partly because the matter is of sufficient importance to be worthy of the consideration of the entire trade, and partly because we are glad of the opportunity which this occasion offers to refer in a friendly spirit to the general relation of chemists throughout the country to this comparatively recent, but certainly flourishing branch of the medical profession. And at the outset of our remarks we wish it to be distinctly understood that we presume to offer no opinion whatever on the therapeutic value of this system of treatment. Whether homœopathy be a science, a delusion, or a swindle, is not the question which we at present propose to discuss; the simple fact of its rapid success as a commercial enterprise during the past ten or twenty years is all we care to regard just now.

The history of homœopathy in England may be told in a very few sentences; its theories, as we have hinted, are somewhat beyond the range of this paper. Its chronicles belong almost entirely to the present century, and according to the narratives of its apostles, they repeat the old story of persecution and martyrdom which has marked the commencement of every new era of truth. But we cannot help remarking that the apostles and martyrs of homœopathy have generally been very shrewd men of business. It is quite true that many members of the medical profession have felt it their duty to attack this system most violently with the weapons of ridicule and contempt, and have, in their own estimation no doubt, left it many times for dead. The British public, however, either from its national sympathy with the weaker side, or more probably from a not unnatural desire to try some more pleasant system of medicine than that which had hitherto been dominant, gave the little stranger a hearty welcome, and it has been ever since, and still is, growing amazingly in favour, more especially with those classes whose favour is of substantial value. Hence we see establishments entirely devoted to this system fast increasing around us, and in every large town of the three kingdoms, homœopathic physicians and homœopathic chemists are now regarded as regular and indispensable institutions. Advocates of homœopathy naturally refer to this remarkable development as a strong proof of the accuracy of their theories; but while we have no wish, as we said before, to disparage their arguments, we would point out very prominently that the achievement of so much favour with the public is altogether independent, and therefore no evidence of the value or worthlessness of homœopathic remedies in the treatment of disease. Among individuals success is generally a fair criterion of merit; but it only needs a very cursory glance at the history of all theories and economies, either medical, social, or religious, to convince us that the growth of error has been always at least as rapid as that of truth. The credit of making homœopathy popular in England can scarcely be claimed by any medical man. The public were pleased with the idea of keeping little medicine chests, and dealing out to themselves and their families the pretty little doses, with their terror-inspiring Latin names; and homœopathic chemists and physicians readily came forward to supply a demand which the public had created. Then followed, according to the custom of the faculty, series after series of experiments, with all sorts of drugs, in all sorts of diseases, practised on those long-suffering beings, whom, with singular appropriateness, the doctors call their "patients;" and, curiously enough, the cases generally turned out exactly as the experimentalists had anticipated. This is, we believe, a fair *résumé* of the art of building up almost any so-called system of medicine, and it certainly applies to the one now under review, which we readily admit is the only one which can with propriety be called a system at all. The only doubt in some minds is whether homœopathists have not *out-systemed system*.

Looking at homœopathic practice from a strictly commercial point of view, it is quite evident that a large proportion of the public demands to be supplied by some one or another with homœopathic remedies—the "medicines of mercy," as one writer has neatly described them—and we confess ourselves altogether unable to comprehend the prejudice which has deterred general chemists from supplying these remedies, and has diverted from them so profitable a share of the physic-taking public's patronage. If a chemist has conscientious objections to supply articles that he believes to be the produce of "humbug," he certainly deserves honour for his self-sacrifice; but we see no reason why a perfectly honourable trade should not be carried on in homœopathic remedies by one whose faith in allopathy is unshaken. In the first place, it is hardly the druggist's duty to decide whether a medicine asked for be of value or not; and secondly, we presume he is no more morally bound to believe in the perfect virtues of every article in which he deals, than is a bookseller to supply only such works as shall exactly agree with his own views. We cannot think that either the prosperity or the honour of the drug trade demands an unswerving allegiance to jalap and senna; and if customers will continue to ask for bread, what reason or policy can induce the druggists to persist in offering them stones? If a person wishes to bleed, to sweat, or to be purged, let him have leeches, or Dover's powder, or salts, as the case may require; but we can see no manner of reason why he should be bled, sweated, or purged against his will. Let chemists and druggists be as highly educated as they will, but let them be thoroughly catholic in their studies, and liberal in their judgment of new ideas, both for their own advantage, and for the convenience of the public. No chemist will find himself any the worse for an examination into the principles of homœopathy; and if he wishes the public to regard him as well informed in his business, it is essential that he should make himself acquainted with these and with the rest of the new ideas which are so constantly arising.

The position in which dealers in homœopathic medicines are placed by the new Pharmacy Act is certainly a curious one, and is a situation not unlike what the Americans would term a "quandary." As we have before remarked in this journal, during the whole time that the Bill was under consideration, both within and without the house, these gentlemen have calmly watched the proceedings with a perfectly placid, not to say a listless, feeling of fancied security; and now, forsooth, some of them choose to make the complaint that it was hurried through Parliament. That their interests were affected does not seem to have occurred to them until a month or two after the Bill had passed into law. Then it was that the *Homœopathic Review* suddenly sounded the note of alarm, and "with one start and with one cry" the whole body seemed to awake to something like a just, though apparently a most bewildered conception of their danger The report of their recent meeting presents such an amusing and yet withal so pathetic a picture of their dismay, that we offer a few of its features to our more general readers.

The difficulties which have suggested themselves to our homœopathic friends relate to three points: first, to the legal right to registration of *all* those who supply homœopathic medicines; secondly, to the preparation of these remedies; and thirdly, to their sale. Now, with respect to registration, we see very little difficulty, no injustice, and certainly some benefit resulting from the Act. It simply provides that none but registered chemists and druggists shall for the future supply certain poisons and their preparations; and all those gentlemen, whether homœopathic or allopathic, who have fairly kept "open shop for the compounding of prescriptions of duly qualified medical practitioners" have undoubtedly the right of registration. It is equally clear that, if properly carried into force, as we have good reason to believe it will be, this Act will entirely prevent grocers, booksellers, and hairdressers from retailing the poisons included in the schedules *in any form whatever*; and we know that in some country towns these classes have been selected by some wholesale homœopathic chemists to be their agents. We congratulate our readers on this result, and it is this reason which has induced us to recommend them at this particular time to take the opportunity of becoming more generally homœopathic retailers themselves. The second difficulty which occurred to several speakers was a doubt whether they would still be permitted to prepare their medicines from their own formularies. This matter, too, we will take upon ourselves to decide, and we cannot but express our surprise that any question should have arisen upon this subject at all. The words of the Act are explicit, that no one shall "compound any *medicines of the British Pharmacopœia*, except according to the formularies of the said Pharmacopœia;" and this clause can no more interfere with the preparation of homœopathic tinctures of aconite, sulphur, or belladonna than it can with that of citrate of magnesia or Cockle's pills. But the third difficulty is certainly a serious one. It is unquestionably a grievance, and may become a matter of considerable annoyance, to those who have any trade in homœopathic medicines. Clause 17 of the Act distinctly forbids the sale of certain poisons, *and all their preparations*, except under very carefully defined restrictions. After the 1st of January, therefore, any chemist who shall supply—say a dispensing tube of aconite globules, of whatever attenuation, except to a person known to him, or introduced by such a one, and unless such sale be entered in a book kept for the purpose, with a statement of the object for which the aconite is required, and all this be attested by the signatures of the purchaser, the vendor, and a witness, that chemist will be liable to a penalty of £5 for the first, and £10 for every subsequent offence. Further, it will be necessary that all the medicines in general demand shall be labelled with the word "poison;" and though this is but a minor inconvenience, it is at the same time a manifest absurdity, and for that reason is likely to become a source of error. These anomalies, then, were the points which the homœopathic chemists and doctors met to discuss; and while we fully agree with them as to the desirability of obtaining an amendment in the law on the third point, we must confess to some surprise and disappointment at the result they arrived at after their deliberations. Several altered readings were proposed to be submitted to the legislature, the most extraordinary suggestion being that offered by a gentleman apparently fresh from the perusal of Preston's advertisement of non-poisonous essential oil of almonds, namely, that in Schedule A, after the words "arsenic and its preparations," should be added, in parenthesis, "*unless deprived of their poisonous properties!*" None of the ideas, however, appeared to meet with very general approval, and the result of the meeting, as we gather from the *Homœopathic Review*, was that the homœopathists intend to let the matter stand until a case shall arise for judicial decision.

We cannot, however, consider this determination in any respect satisfactory. The question will have to be settled sooner or later, and we apprehend that, as the law stands, a decision must be given against the chemist who may be selected for prosecution. In that case this is only a waste of valuable time, and it also keeps in suspense those whose interests are affected by the Bill. Surely if an exemptive clause is worth having, it is at least worth asking for; and we may confidently assume that if the arguments in favour of so reasonable a request were properly represented to the Home Secretary, he would do what he could to remedy an anomaly which was never contemplated. We understand that a Society of Homœopathic Chemists is about to be formed. On that Society, therefore, we take the liberty of pressing our advice somewhat urgently, as by their union and influence they might easily carry out the plan we propose. Let them prepare an authoritative document setting forth an exact statement of the preparation of homœopathic attenuations, and showing minutely the proportions of poisons which these contain. They might then confidently ask that all such should be specially exempted from the limitations otherwise imposed. Strong tinctures would of course still and properly come under the Act, and to this homœopathists would only too gladly submit. A secondary but an important advantage which would accrue to the body by adopting such a course would be, that they would thus publicly refute the accusation, frequently made and not without some appearance of foundation, that theirs is a secret system, and consequently a system of quackery; and they would show themselves willing to base the efficacy of homœopathy not on mere fancy, but on the principles laid down by Hahnemann.

TRADE COURTESIES IN AMERICA.

THE following is copied from the *New York Druggists' Price Current*, and as it refers to an English firm well known to our readers, will be of interest:—

"In our issue of the 9th of September a leading article, headed "Disgraceful and Dishonest Practice," appeared. In said article we laid special stress upon the imitation and piracy of Trade Marks.

"Mr. X. Bazin, a perfumer in Philadelphia, considers himself an aggrieved party, and sends us the following letter. Mr. Bazin is a Frenchman, and, of course, his letter breathes nothing but the true French politeness: so, no doubt, he thinks; we let the public judge for themselves. Here it is:

"Mr. EDITOR:—I pronounce the leader of your journal of the 9th instant a wicked lying libel; as care is taken in it to herald the exact address of a certain firm, designating the street and number of its place of business, intelligent readers will look upon it as a puff for the benefit of that house. If its success is to be founded upon slanderous abuse of honest neighbours, it will not be envied by any one who esteems the robbery of character as great an offence as the larcency of property. The puffing of an article of trade by an indecorous newspaper attack is a course that is beneath the contempt of a respectable trader, and I shall not permit myself to be dragged into a newspaper controversy, and down to the level of those who resort to it. Here, in the city of my adoption, where I have resided for over twenty-five years, where I am well known in the community, no man will impeach my character for honesty or honour. Why you, sir, a stranger to me, should spontaneously, without notifying me, without asking for a word of explanation, have ventured to strike at a hitherto unsullied reputation, it is difficult to conceive. A full column, the editorial column too, of your sheet devoted to scurrilous abuse of a name whose sole offence is his honourable pursuit of a business in which one of your advertisers is engaged, thus furnishing an extra notice of great dimension and unusual size. It is no reply to say that in a week after I may use the same medium for a reply, the slander will in many cases pass and remain undiluted, effaced it never can be. That 'an injunction may rightfully be issued,' 'and ought to be issued where one dealer' has counterfeited and pirated 'another's trade mark,' and uses 'false representatives' to divert custom to himself, is most emphatically true, and the question naturally at once arises,—Why has the firm, whose filthy cudgel you have taken up, not asked such an injunction?—On a much weaker case than that which you have claimed to exist, the strong arm of the law would in a very few hours paralyse the hand of the pirate and counterfeit; and if any such case as you have supposed really existed, an Injunction, not a Libel, would have been resorted to. The allegation that I took his cut from a newspaper and transferred it to a lithographic stone, is an unmitigated falsehood. My label is not a counterfeit, a piracy of his, and if he or his agents think otherwise, the remedy is obvious and easy, and you have yourself suggested it. If I have unjustly deprived them of the smallest right, or unlawfully divested from them the smallest profit, ample redress is open to them, and, after having tried it, they will be at perfect liberty to give column puffs of their article by advertising the result of suit; perhaps that will not be the right sort of puff, as the case might not succeed, and, therefore, a newspaper assault is preferred. But such an attack establishes no right any more than a kindred violence upon the person would do it; if you or your correspondent had ruthlessly waylaid me, and assailed my body in the dark, you would have shown just as clearly that I was in the wrong and the 'agent in the right,' as you have done by the reckless assault upon my reputation. The charge that your paper has made against me is false, and I challenge its author to show his regard for truth and integrity by doing his best to support his allegations before the proper tribunal; if he has any such regard, the day is not far distant when the same calumny will convey to your readers a full apology for his gross offence. I promise him every accommodation and facility towards ensuring a speedy decision of his course, and if he has any such right as your article has set up for him, he can have his injunction before the issue of your next week's number."

"Your paper, I presume, circulating far and wide, and, having been the medium of publishing a foul slander, I ask, as a first step towards justice, that you give place to this article as prominently as you did to the libel which has elicited it. If you ask it, I will cheerfully pay for its publication. In conclusion, I further complain of you that you did not communicate your article to me, but left it to chance that I should discover what you had done; thus allowing the libel to spread, until I should accidentally learn its existence, and be enabled to deny its truth and court the investigation usual with all persons who do not stab bosom or reputation in the dark, whether gratuitously or for hire.

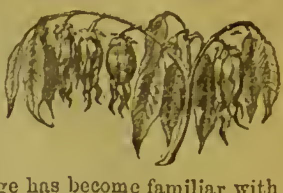
"X. BAZIN,
"917 Cherry Street.

"PHILADELPHIA, September 14th, 1868.

OUR REMARKS:

"Mr. Bazin says: 'As care is taken to herald the exact address of a certain firm, designating the street and number of its place of business, intelligent readers will look upon it as a puff,' etc. Our readers will notice, Mr. X. Bazin not only signs his name to his polite letter, but he carefully adds his number of the street and place of business also, ergo, as he says, he wants a puff, and we let him have it gratis; yet, how strange is human nature, what a difference it makes to him, whose number and street is mentioned!

"We have, in our article of the 9th instant, charged Mr. Bazin[*] of appropriating to his own use the well-known trade-mark of Eugene Rimmel, of London and Paris, and we hope to prove it, beyond a doubt, by illustrating the same."



"Here is the cut of Mr. Rimmel's Ihlang-Ihlang—a cut used by his agents, Messrs. Edward Greey & Co., 38, Vesey-street, New York, in all their advertisements, and the public at large has become familiar with the same.

"Here is the cut of Mr. X. Bazin, of 917, Cherry-street, Philadelphia. This cut is the true fac-simile of a label of a bottle of Bazin's Ihlang-Ihlang, bought in presence of witnesses in Philadelphia, and we ask the trade at large where is the difference."

[Here follows, in the original, M. Bazin's cut, which it is of course impossible for us to procure, but which is in every particular identical with that of Mr. Rimmel. After pointing out minutely the points of resemblance, the writer proceeds.]

"So far we hope to have proven to the trade at large the exact position of flowers, leaves, branches, and all the other minute details; should anyone doubt it, we are ready to produce to anybody and everybody the bottle of Mr. Bazin's Ihlang-Ihlang and the cut of Mr. Rimmel, the whole of which can be seen at our office.

"To go further, and as proof that Mr. Bazin has violated Mr. Rimmel's Trade Mark, we challenge him to give his authority of spelling Ihlang-Ihlang with I-h-lang I-h-lang.

"This flower of flowers Ylang-Ylang is of Spanish origin, grows only upon the Phillippine Islands, and as Mr. Bazin is a Frenchman, and a man of education, he will not deny that the true spelling of a Spanish word or words is in such cases always with a Y, and not with an I-h.

"Mr. Rimmel adopted this original spelling, and all other perfumers have respected his property. The world at large has a right to obtain the Ylang-Ylang, and as such spell it upon their label in the true manner of its Spanish origin. In Paris all the perfumers make Ylang-Ylang. In Philadelphia Messrs. R. & G. A. Wright make Ylang-Ylang extracts for the handkerchief and spell upon their label the words with a Y. How comes that Mr. Bazin exactly spells upon his labels Ihlang-Ihlang just as Mr. Rimmel does with an I-h, thus Ihlang-Ihlang.

"Suppose as Mr. Bazin denies to have reproduced Mr. Rimmel's cut, how does he account for Mr. Rimmel's original spelling?

"Considering the above fairly, the particular stress Mr. Bazin seems to lay upon his reputation of twenty-five years' standing, is somewhat of a glory; but even there, all that glitters is not gold; so at least think the United States Custom-house Officers, in the Examiner's Department, when, No. 24, French Pomades are invoiced for No. 12.

"Mr. Bazin complains further, saying: why did we not notify him of our intention to publish that famous article of September 9th. It seems Mr. B. is in the habit of dealing with a certain class of so-called Editors, who under cover of black mail extort money and show to the party interested their article before publication; if that party comes down handsomely with a round sum of money, the article is not published. This time M. Bazin has mistaken his man, and we assure him, he has neither power nor money enough to alter even a single comma in one of our articles.

"As to the rest of Mr. Bazin's Letter, we consider it below notice, and treat it with the silent contempt it deserves, for after having proved beyond a doubt that the similarity of Mr. Rimmel's Trade Mark with Mr. Bazin's labels, and the denial of Mr. Bazin with all his twenty-five years' reputation, leads us to believe and the trade at large will agree with us that to Mr. Bazin of Philadelphia, Truth is STRANGER than fiction."

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[*] We make no claim to the credit of the original style of composition which is noticeable in the above article.—Ed. C. & D.

PHARMACEUTICAL EXAMINATIONS.

In accordance with the expressed wishes of numerous subscribers, we publish the Regulations of the Board of Examiners, confirmed and adopted by the Council of the Pharmaceutical Society, for the Examination and Registration of Pharmaceutical Chemists, Chemists and Druggists, and Apprentices or Students.

ORDINARY EXAMINATIONS.

THE BOARD OF EXAMINERS IN LONDON.

The regular days of meeting for conducting the examinations are the third Wednesday in every month throughout the year, excepting August and September, at 11 a.m.

THE BOARD OF EXAMINERS IN EDINBURGH.

The Board meets at such times as suit the amount of business to be transacted. Notice is given in the *Pharmaceutical Journal* when such meetings are to take place.

CLASSICAL OR PRELIMINARY EXAMINATION.

Candidates being Apprentices or Students in Pharmacy are examined in the following subjects:—

Latin—translation of a passage from the first book of Cæsar's Commentaries, "De Bello Gallico."
Latin Grammar.
English Grammar and Composition.
The first four rules of arithmetic, simple and compound, vulgar fractions, and decimals.

Candidates residing at a distance of more than ten miles from London (or if in Scotland, at that distance from Edinburgh), may, on applying to the Secretary, and enclosing the specified fee, be supplied with a printed form of certificate, to enable them to be examined by any qualified person approved by the Board, *but not being the teacher of the candidate.*

The certificate of examination, duly signed by the Examiner, and delivered to the Secretary, will, if approved by the Board, entitle the candidate to be placed on the register.* [*Examination or Registration Fee*, £2 2s.]

MINOR EXAMINATION. (REGISTERED AS CHEMISTS AND DRUGGISTS.)

Candidates are examined in the following subjects:—

Prescriptions.—The candidate is required to read without abbreviation autograph prescriptions; to translate them into English; and to render a literal as well as an appropriate translation of the directions for use.

Practical Dispensing.—To weigh, measure, and compound medicines in the most approved manner; to write the directions in concise language as well as in a *neat and distinct* hand, and correctly translate the prescription; finally, to finish and properly direct each package. The candidate will be required to spread plasters with dexterity and neatness.

Pharmacy.—To recognise the several preparations of the Pharmacopœia which are not of a definite chemical nature, such as extracts, tinctures, the simple and the compound powders, etc.; to describe the composition of such as are compound, and to give the proportions of the active ingredients.

Materia Medica.—To recognise the several specimens of roots, barks, leaves, fruits, resins, gums, etc., contained in the Materia Medica of the Pharmacopœia, to give the botanical names of the plants yielding them, the natural orders to which they belong, the countries from which they are obtained, and the officinal preparations into which they enter; also, to recognise and describe the sources of the more important animal substances used in medicine.

Botany.—(1) To recognise the more important indigenous medicinal plants; (2) To possess a general knowledge of the elementary structure of plants, and of the stem, root, and leaf, as far as these subjects are treated of in the first 134 pages of Bentley's "Manual of Botany;" and (3) To know the names of, and to be able to describe the parts of the flower, as far as these are noticed in the above manual, from pp. 214—217.

Chemistry.—To recognise the several acids, oxides, salts, and other definite chemical bodies ordered in the Pharmacopœia; to describe the processes by which they are produced, the composition of such as are compound, and the decompositions that occur in their production. [*Examination or Registration Fee*, £3 3s.; or, if not previously registered, £5 5s.]

MAJOR EXAMINATION. (REGISTERED AS PHARMACEUTICAL CHEMISTS.)

Prescriptions and Posology.—The candidate is required to render in good Latin prescriptions written in English, to detect errors in written Latin prescriptions, and to discover the occurrence of unusually large doses when such are prescribed.

Practical Dispensing.—If sufficient dexterity has been manifested in ordinary dispensing operations at the "Minor" Examination, the candidate will not be required to repeat them. He will be examined with reference to his knowledge of the strength of simple solutions ordered in the Pharmacopœia, by which he may be enabled readily to make practical application of such knowledge; also with reference to the best excipients and methods of manipulation, for forming emulsions with oils, resins, balsams, and other substances not otherwise miscible with aqueous liquids, and for giving a good pilular condition to substances which are administered in that form.

Pharmacy.—The candidate is required to explain the processes employed for the preparation of medicines which have not a definite chemical composition, including maceration, percolation, evaporation, etc., and to manifest an acquaintance with published improved processes for pharmaceutical preparations.

Materia Medica.—The examination will extend to the qualities of drugs, the means of estimating these qualities, and of distinguishing the genuine from the spurious. It will comprise a knowledge of the active proximate constituents of the most important drugs, and of the methods of obtaining these in a separate state, and testing their purity.

Botany.—The candidate will be expected (1) To possess a more intimate acquaintance with the parts of the flower than was required at the Minor Examination, as well as of the fruit and seed; (2) To know the functions of the different organs of plants; (3) To have a knowledge of the general principles of classification, and of the Linnæan System and De Candolle's Natural System, as far as these subjects are treated of in Bentley's "Manual of Botany;" (4) To be able to give in writing the diagnoses of those natural orders which contain important indigenous medicinal and economical plants, and to recognise and be able to refer such plants to their respective natural orders.

Chemistry.—The examination will comprehend the laws of chemical combination, the means of determining, by tests, the composition of chemical substances used in medicine, and especially of detecting impurities; also the means of detecting poisons, and the best antidotes for poisons, to be administered in cases of emergency. In this part of the examination will also be comprehended chemical physics, as far as this branch of knowledge is treated of in Fownes's "Manual of Chemistry."

No candidate shall be admitted to this examination until he has completed the twenty-first year of his age, and has passed the "Minor" Examination at least three months previously, excepting that, with reference to the last-named condition, the Board may depart from the rule under special circumstances which appear to them to justify such a departure. [*Examination or Registration Fee*, £5 5s.; or if not previously registered, £10 10s.]

SEPARATE EXAMINATIONS

FOR MEN IN BUSINESS.

These examinations are held on the fourth Wednesday in February, June, and October, for chemists and druggists in business on their own account, provided they have been established for at least five years, or are at least thirty years of age; and also for persons engaged in the confidential management of the business of a chemist and druggist, who are not less than thirty years of age, and who have been so occupied for the term of five years. The subjects are the same as in the ordinary examinations, but a knowledge more practical than theoretical will be accepted.

Prescriptions.—Reading; translating literally; methods of dispensing the prescription; detection of unusual doses.

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* The Middle Class Examinations of Oxford, Cambridge, or Durham, and the Examination of the College of Preceptors, including Latin as one of the subjects, are accepted on behalf of Registered Apprentices or Students in Pharmacy, in lieu of the examination by the Board of Examiners in Bloomsbury-square, or these certificates.

Materia Medica.—Recognition of drugs; names of plants or animals yielding them; habitats, and whence imported; preparations into which they enter; indications of the commercial characters and qualities of drugs.

Pharmacy.—Recognition of preparations; description of their composition, and proportions of active ingredients; description of Pharmacopœia processes.

Chemistry.—Recognition of chemical substances used in medicine; processes for their preparation; chemical composition and decomposition; detection of such impurities as are ordinarily met with; antidotes for poisons; nature and method of taking specific gravities.

Botany.—Recognition of important indigenous medicinal plants from fresh or dried specimens; distinctive characters of roots, stems, leaves, flowers, fruits, seeds, and their parts; functions of roots, stems, and leaves.

Candidates passing the separate examinations are registered as PHARMACEUTICAL CHEMISTS, and are eligible for election as MEMBERS OF THE SOCIETY. [*Registration Fee, £10 10s.*]

A candidate failing to pass the examination will, on presenting himself on a future occasion, be examined in those subjects only in which he was found deficient.

MODIFIED EXAMINATION

FOR ASSISTANTS UNDER THE PHARMACY ACT, 1868.

[*As Approved by the Privy Council.*]

Candidates will be examined in the following subjects:—

Prescriptions.—Candidates will be required to read autograph prescriptions, translate them into English, render a correct translation of the directions for use, and detect unusual doses.

Practical Dispensing.—To weigh, measure, and compound medicines, write the directions in suitable language, finish and properly direct each package.

Materia Medica and Quality of Specimens.—To recognise the Pharmacopœia chemicals in frequent demand, and specimens of roots, barks, leaves, fruits, resins, and gums in ordinary use; the following plants, either in a fresh or dried state, or from plates:—Belladonna, stramonium, hyoscyamus, conium, aconitum, digitalis, and sabina; also to estimate the quality of each specimen submitted, and its freedom from adulteration.

Pharmacy.—To recognise the preparations of the Pharmacopœia which are not of a definite chemical nature, such as extracts, tinctures, and powders, and give the proportions of the more active ingredients.

Candidates for the respective examinations must give notice to the Registrar of their intention to present themselves for examination, together with the fees, at least ten days prior to the day of examination. Candidates for the "Major" are required to attend, for the *written examination* on chemistry, botany, and Materia Medica, at 10 a.m., *on the day previous to the meeting of the Board.* Candidates failing to pass either of the examinations will be admitted to a subsequent examination, after an interval of three months, on giving the usual notice.

ON INHALATION IN DISEASES OF THE THROAT, PARTICULARLY IN CROUP.

BY HERMANN BEIGEL, M.D., M.R.C.P.

Physician to the Metropolitan Free Hospital.[*]

I PROPOSE to make a few remarks on the local treatment of those diseases of the larynx in which certain inflammatory conditions form the most prominent characters, and which may be successfully treated by the topical application of certain remedies. These diseases have only been made the subjects of careful study since the introduction of the laryngoscope into medical practice, and hence it has become necessary that every practitioner who intends to treat these affections should make himself acquainted, in the first place with the methods of laryngoscopic investigation, and in the second place with the local application of medicaments.

By far the greatest number of throat diseases which commonly come under our notice are of an inflammatory character, and if such a disease be situated in the pharynx, including the uvula, tonsils, and soft palate, the diagnosis will be easily made by simple inspection; but if the lesion be limited to the epiglottis, the vocal chords, or the lining membrane of the larynx, or if perhaps all these parts together be simultaneously affected, the nature of the disease cannot be discovered without the aid of the laryngoscope.

It is not my intention, however, to dwell on the methods of application of this valuable instrument, and I merely refer the reader to the works of Johnson, Gibb, Mackenzie, Türck, Bruns, and others.

Croup is one of those inflammatory diseases in which, at an early period, we are enabled to do much good, and to save the patient's life, by the timely application of proper remedies, but in which a short delay may very often prove fatal. At the same time, it is a disease very liable to be mistaken for another not less fatal, viz., diphtheria.

Attempts have been made, especially by French authors, to prove that these two diseases are identical; but every observer who has had ample opportunity for the close observation of both affections, will be at a loss to understand how such an attempt could be justified. It is a well-known fact that diphtheria generally commences in the tonsils, and extends thence into the larynx, forming a false membrane, which is so closely adherent, and even interlaced with the normal tissues, that an attempt to remove it brings away small shreds only, with adherent portions of the mucous membrane, thus leaving a rough, bleeding, and painful surface. In croup, on the other hand, although a false membrane is likewise formed, it is not adherent to the subjacent surface, but merely lying upon it, so that it may not unfrequently be expelled by the effort of coughing, in the form of a mould of the parts on which it has been formed. It is well known that in this manner not only a complete cast of the larynx, but also of the ramifications of the trachea and its branches, may be ejected. Much importance was formerly attached to the sound attending these fits of coughing, which has been described as barking, crowing, &c.; but no great reliance can be placed upon these signs, since they may be produced in many affections of the larynx. The most important fact, however, which distinguishes these two diseases, is the general or constitutional character of diphtheria, and the purely local nature of croup. This point is well illustrated by what occurs in the treatment of these affections: suppose that in either of these cases tracheotomy has been performed, in diphtheria the progress of the disease is not only not checked, but the wound inflicted often takes on the diphtheritic character, whilst in croup this complication has never been observed, and we may very often save the patient's life by performing this operation at an early period.

In determining the value of the treatment of diseases of the throat by means of inhalation, much will depend upon the proper selection of an apparatus adapted to the nature and situation of the affection, as I have endeavoured to show in my work on this subject[*] Inhalation cannot be considered as constituting of itself a system of treatment, but merely as a means for the local application of certain remedies, which has proved successful wherever a fair trial has been accorded to it.

Even after the long-continued debates and experiments in the French Academy of Medicine had settled the question, whether or not atomized fluids penetrate into the larynx, trachea, and lungs, doubts were entertained on this subject by high authorities, both in this country and in Germany. I may mention the name of Virchow, who raised objections on the ground that, in people long employed in factories, and breathing air charged with fine dust of various kinds, no particles of this dust could be found in any of their air-passages on post-mortem examination. These doubts have, however, been recently removed by Professor Zenker, of Erlangen, who has published a number of cases in which snuff and different coloured powders have been found in the lungs of workmen employed in workshops in which such particles have been mixed with air. Since this Virchow has acknowledged the correctness of this view and the error of his former opinion. I am induced to draw special attention to these facts, in consequence of patients of mine, who have received benefit from this treatment, having been subsequently told by eminent members of the profession, that it is impossible that any advantage can be derived from this method, as no atomized fluid can ever enter the larynx.

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[*] From *The Practitioner*, a new monthly journal of Therapeutics.

[*] "On Inhalation as a means of Local Treatment of the Organs of Respiration by Atomized Fluids and Gases. London: Robert Hardwicke. 1866.

From the remarks I have just made it is evident that the use of inhalation does not exclude treatment by the internal administration of remedies, whenever it becomes necessary; but this does not belong to my present task. I shall therefore pass on, at once, to the description of the requirements of an efficient inhalation apparatus.

The instruments in general use may be described under two heads, viz., those worked by steam, and those worked by compressed air. The first kind is most conveniently employed when the patient is feeble, and when the fluid is not required in too concentrated a form; but the inconvenience connected with the instrument consists in the admixture of steam with the fluid, so as to render it impossible to determine the exact dose administered. Whenever, therefore, the general health of the patient admits, or when the apparatus is to be worked by a second person, or when the remedy is to be applied to children, that variety will be found most useful which is worked by compressed air. The most simple form of such apparatus is that devised by Dr. Bergman, and improved by Dr. Andrew Clarke, generally known as the hand-ball atomiser. This instrument, when supplied with a tube as suggested by Professor Winterich, deserves the preference over all the other forms. The addition of this long tube causes the spray to be generated at the back part of the patient's mouth, and thus enables it to be applied more locally than is otherwise possible. Messrs. Meyer and Metzler, of Great Portland-street, manufacture similar tubes of vulcanite, which are not so liable to be broken as those of glass, and are equally unaffected by corrosive liquids. This is the instrument which I generally employ in cases of inflammatory affections of the throat and windpipe. The woodcut represents this inhaler, the action of which does not require any explanation.

The substances employed in the treatment of inflammatory affections of the throat are astringents and caustics—viz., tannin (in solutions containing from 2 to 10 grs. to the fluid ounce), sulphate of zinc (of the same strength), perchloride of iron (5 to 15♏ to 1 fl. oz.), alum (1 to 5 grs. to 1 fl. oz.), and nitrate of silver (½ to 5 grs. to 1 fl. oz). In simple catarrhal diseases inhalations of turpentine, and more especially of the vapour of chloride of ammonium,* are of great service. The latter mode of treatment has rendered me great service in those cases in which an inflammatory state of the vocal chords, or the mucous membrane lining the larynx, has caused partial or total loss of voice in such persons as are obliged to use their organs of voice and speech to an inordinate degree, as clergymen, singers, actors, &c. At the end of last year a clergyman was sent to me whose voice was not only hoarse, but became entirely inaudible at each attempt to raise it to a high pitch for any length of time; the laryngoscope examination showed nothing but an inflammatory state of the vocal chords and the lining membrane of the larynx; much mucus was secreted, and a constant tickling felt in the throat, which gave rise to an uninterrupted cough. After many remedies had been employed and the local application of astringent solutions had failed, I advised inhalation of the chloride of ammonium, which after four weeks restored the voice to its full strength and vigour, and enabled the patient to perform his duties, which he had been unable to do for many years.

With regard to the different application of caustics and astringents in these cases, the following general indications may prove useful. We very often meet with cases in which the amount of irritation does not seem to be in proportion to the intensity of the inflammation. This is particularly the case where the disease is of long standing, and when the inconvenience caused is rather distressing than painful: a small amount of mucus is secreted, which is of a viscid character, and can only be expectorated with difficulty, thus producing a constant cough, which is increased by every attempt to speak or sing. Such cases do not bear astringent applications, under the employment of which the symptoms generally increase. The reason of this is obvious: the mucous membrane being chronically inflamed, and its nerves in a state of constant irritation, a kind of irritability is established, which, by the local application of a stimulant is merely increased, whilst a solution of caustic, by destroying this chronic irritability and altering the nature of the inflammation, gives as it were a new vitality to the relaxed organ.

The same may be said of the opposite state of acute inflammation of the pharynx and larynx: here the irritation exists in a very high degree, and, unless some strong caustic agent be applied, no improvement can be effected; astringents, as well as weak solutions of caustic, adding merely to the irritable state without being able to arrest its progress. This is simply the same principle upon which the abortive treatment of inflammations of other mucous membranes is practised, as in conjunctivitis or in the case of the urethra in gonorrhœa. I could refer to a large number of cases supporting this view, which in private practice, as well as in the hospital, have come under my notice.

The so-called ulcerated throat is very often not so painful to the patient as it is disagreeable to his friends from the fœtid character of his breath; and it is generally this symptom for which, in private practice, the practitioner is consulted by patients, who usually attribute the cause to the stomach or to the lungs. This error may, moreover, be easily committed by the medical adviser if the patient be not carefully submitted to thorough laryngoscopic examination. I have myself known a lady who had been treated for some considerable time for disease of the lung, the only symptom present being a very unpleasant fœtid condition of the breath, together with a slight cough; her friends were naturally very much alarmed, but on careful examination I could detect no sign of any disease of her respiratory organs. I found, however, that several ulcers had existed in the posterior wall of the pharynx, which secreted freely, and thus gave rise to the fœtor described. Repeated applications of a solution of chloride of lime in an atomised state produced a more healthy condition, and at the same time destroyed the smell; the ulcers healed rapidly. Such ulcers often cannot be so easily detected as in this case, either from their position, or from the smallness of their size. When on the upper surface of the soft palate or within the arches of the fauces, close inspection is necessary for their detection, and no application is so convenient as that of the medicated spray. Such cases of long-standing inflammation, accompanied by ulceration and the production of mucus, are particularly well suited for treatment by astringent solutions applied in this manner. Some cases of obstinate ulceration of the throat, accompanied by fœtor of the breath, which do not yield to other treatment, may prove manageable when treated with inhalations of carbolic acid. This remedy may either be employed as spray, fifteen minims of the concentrated acid being added to one ounce of water, or by inhalation, for which purpose the inhaler which I introduced for inhalations of oxygen, and which is sold by Robbins, of Oxford-street, is well adapted.

In croup I combine, wherever it is possible, as I do in other diseases of the organs of respiration, internal treatment with inhalations, or apply them alternately as the case may be; but very soon the little patients are either unfit or unwilling to swallow, and sometimes persist in their refusal very obstinately: here atomised fluids and vapours therefore are of particular value for two reasons; firstly, because some children who refuse medicine, look at the atomiser as a kind of toy, and willingly submit to its action; secondly, because there is no difficulty, in case of need, in forcing a child to expose his pharynx and larynx to the action of the remedy, as the very act of screaming is very favourable to the entrance of the spray into the air-passages. The remedies employed by different physicians are the following:—

1. Bromide of potassium was first used in the atomised state in this disease by Dr. Schnitzler. In one of his cases, a boy, three years of age, was severely attacked, and his breathing became difficult in the extreme; in order to gain at least some momentary relief, large doses of tartar emetic were given without producing vomiting, and inhalation was merely tried as a last resource; a solution of bromide of

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* See paper by the Author on this subject in *Lancet*, vol. ii. 1867, p. 512.

potassium, five grains to the ounce, was applied in the form of spray, and its use was followed almost immediately by the expulsion of shreds of false membrane. The breathing became easier, without stertor; the child felt relief for two hours, when it relapsed to its former condition. It was subsequently relieved five times under the same circumstances; and although the relief felt was considerable, the progress of the disease could not be arrested at this stage. In other instances the same drug (ten grains to the ounce) was employed with success. I have myself tried this remedy at an early stage of this disease, and found the symptoms arrested.

2. Tannin has been strongly recommended, both in croup and diphtheritis, by Barthez and Trousseau. The solution applied contained five per cent. of tannin; each inhalation lasting from fifteen to twenty minutes. After several repetitions of this, large pieces of false membrane were ejected, and the breathing relieved. In some of these cases the voice was very hoarse, nearly inaudible, but was restored in consequence of the application of the atomiser. These authors state particularly that no difficulty whatever was experienced in applying the spray.

3. Lime-water has been found useful by many authors, who attribute to the agent the power of dissolving the pseudo-membranes, both of croup and diphtheria; in the latter disease it has found a strong advocate in Dr. Geiger, of Philadelphia. In croup, I was myself enabled to try it in several cases, in one of which it relieved the child in the course of twelve hours, after other inhalations had been employed without producing any marked improvement. Professor Biermer speaks likewise strongly in favour of this remedy. It is used in the proportion of one part to thirty parts of water, each inhalation lasting about a quarter of an hour, and to be repeated every two hours as long as bad symptoms are present.

4. Watery vapour has been recommended by MacIntosh for croup, as well as for bronchitis. The same has been used by Budd, who combined it with the administration of emetics.

5. Oxygen has been recommended by Dr. Miquel. His patient was a little boy, twenty-one months old, who was suffering from croup: respiration abrupt, stertorous, whistling, and irregular, numbering forty times in the minute; pulse small, very frequent, so as not to be counted; face and lips livid; the child's expression anxious; the patient was so exhausted as scarcely to be able to cough, and when he did so it was with a low barking voice. A large number of remedies were employed without success, while the administration of oxygen restored the child to health.

On reviewing these different remedies, it may be remarked that whenever we are called upon to act in cases of croup, it would be advisable to apply, in the first instance, the medicated sprays, these being very easily obtained, and the apparatus being always in readiness. The drugs above-mentioned I would from my own experience arrange in the following order, in respect to their value: first, lime-water; second, tannin; third, bromide of potassium.

I need not repeat that, with these, the administration of emetics or other remedies may and must be combined if considered necessary. The vapours and oxygen are not equally simple in their administration, and, therefore, can be applied only in those cases in which a suitable apparatus may be obtained. For the production of steam, an apparatus may readily be extemporized by holding a funnel over a vessel of boiling water, the patient inhaling through the tube of the funnel.

FACILITIES FOR DISPENSING MEDICINE.

BY HENRY BIROTH.*

AFTER commenting on the position held by the pharmacist, and the qualifications required for the proper performance of his duties, the author offers the following practical suggestions for facilitating the compounding of prescriptions:—

1. *A Solution of Sulphate of Quinine in Sulphuric Acid.*—Take of sulphate of quinine one ounce, mix with eight ounces of water, then drop carefully into it concentrated sulphuric acid, and stir until the quinine is dissolved, then add sufficient water to make the whole measure ten fluid ounces. Ten parts of this solution will represent one part of quinine.

A similar solution may be made with aromatic sulphuric acid.

2. *A Solution of Nitrate of Silver.*—The exact weighing of nitrate of silver in small quantities is very difficult, and takes up a great deal of time, which, in dispensing, is of great importance. The solution is made by dissolving an ounce of nitrate of silver in sufficient distilled water to make it measure ten fluid ounces. This solution has to be kept in dark-coloured bottles, to prevent its decomposition by light.

3. *A Solution of Chloride of Zinc.*—Chloride of zinc being a deliquescent salt will soon become unfit for weighing by using it often. The solution is made in the same way as the above, by dissolving one ounce of chloride of zinc in sufficient distilled water to make it measure ten fluid ounces.

4. *A Mixture of Strychnia with Sugar.*—This is an important mixture, as strychnia cannot be too carefully handled. Doses of one-twelfth, one-eighth, or one-quarter of a grain cannot be weighed with as much accuracy as when mixed with sugar; the lightest breeze of air often affecting the correctness of the scale. One drachm of strychnia mixed with sufficient white sugar to make the whole weigh twelve drachms, is a convenient mixture in most all cases where small portions of strychnia are prescribed.

5. Similar mixtures as the above can be made with morphine, opium, and tartar emetic. The proportions may be made the same, or smaller.

6. *A Concentrated Solution of Gum Arabic.*—Instead of using the powdered gum arabic wherever prescribed in liquids, it is better to use a solution of the gum in proportion 1 : 2; with this the medicine will always look nice and clean, and emulsions made with it will be elegant.

7. In a good many instances, the dispensing druggists will avoid straining mixtures, by keeping solutions in the proportion of 1 : 2 of the following salts:—Ammoniæ murias, magnesiæ, sulphas, potassæ nitras, soda sulphis.

8. Very practicable are solutions of several narcotic extracts, for example: Extractum hyoscyami, extractum aconiti, extractum belladonnæ, extractum opii. As these extracts are often used in ointments, their solutions have to be concentrated 1 : 2, and as they are liable to decompose when dissolved in water alone, an addition of alcohol is necessary; glycerine is also a good solvent for them.

9. Misturæ cretæ is a preparation which only should be made extemporaneously. For this purpose, the dry mixture may be kept ready, according to the U.S. Pharmacopœia, *i.e.*: ℞ Cretæ præparatæ, two parts; sacchari albi; pulvis acaciæ aa one part, mix. One drachm of this with half an ounce each of water and cinnamon water will make one ounce of chalk mixture.

10. We cannot always get fresh lard, and as long as our unguentum simplex is directed to be made with white wax—an already rancid body—it happens very often that an ointment of iodide of potassium gets yellow, instead of being perfectly white. A few grains of hyposulphite of soda dissolved in a little water, added to such ointment, will turn it snow white.

11. Acetate of lead will change partly into carbonate of lead by the carbonic acid of the atmosphere or of the water; therefore, solutions of it will always have a milky appearance. In all cases where it is prescribed for internal use, the precipitated carbonate of lead should be redissolved with a few drops of acetic acid, and the solution will be clear.

12. It is very important in cases of poisoning to prepare a freshly-precipitated hydrated oxide of iron. This should be done in the shortest time possible; therefore, the necessary ingredients have to be kept ready separately in their respective proportions, that is: Solution of tersulphate of iron, four ounces; aqua ammoniæ, sufficient quantity. The precipitation is made according to the U.S. Pharmacopœia, strained, pressed firmly with the hands, and then mixed with sufficient water to make it measure six ounces. The sulphate of ammonia partly remaining in the precipitate, does not interfere with the effect of the antidote.

All these preparations should be labelled in a proper way, so that no mistake in using them may ever occur.

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* Communicated to the *Pharmacist*, a monthly journal, just started by the Chicago College of Pharmacy.

NOTES ON LEMON-JUICE AND ITS DECOMPOSITION.

BY W. W. STODDART, F.O.S.*

THE long-continued separation which a sailor afloat endures from all that is fresh and varied in his food, especially from that of a vegetable nature, has always been known to be productive of disease.

For many years the physician has known that the free use of fresh vegetables, or a sufficient quantity of the juice contained in the hesperidia of lemons (*Citrus Limonum*), or of limes (*Citrus Limetta*), will speedily ensure a cure of the unfortunate patient.

The two latter, from their easy preservation and portability, have been a *sine quâ non* with sailors—so much so, that the marine authorities have ordered every ship to have in its stores a quantity proportionate to the crew. In this respect, as in many others, poor Jack has been grossly victimized by the rascality of dishonest dealers; probably I should not be far from the mark, if I said that half the liquid sold as lemon or lime-juice has been a mineral rather than vegetable production. A modern author coolly informs us that an artificial solution of sulphuric acid is more agreeable to the nautical palate than the true juice!

As long ago as 1795 the Admiralty issued orders that ships should carry a supply of lime or lemon-juice, but ever since that time this well-meant regulation has been rendered null and void, by the wretched trash that has been bought and sold. An immense quantity of lime and lemon-juice being required in the market, and the supply to a certain extent limited, the most abominable and fraudulent adulterations have cruelly been the rule instead of the exception, and many times a genuine sample could not be bought at any price. The Board of Trade, being aware of this, wisely resolved to pass, in the present year, "The Shipping Act."

This compels the mate of every foreign-going ship to provide so much lime or lemon-juice, that each man may have at least one ounce per diem, so soon as the vessel has been ten days at sea. That for forty men, one gallon should be kept; for sixty, two gallons, and so on. It goes on to summarily forbid every captain to take on board any lime or lemon-juice that has not been passed by an officer appointed by the board for that purpose. It is to be tested for gum, sugar, citric acid, and general freedom from adulteration. It is to have a specific gravity of not less than 1·030, and not less than 30 grs. of citric acid per ounce, and to have a proper taste, colour, odour, and consistence. The consternation among the merchants holding large quantities of lemon-juice may easily be imagined, for although the Board of Trade had given considerable latitude in their requirements, yet hardly any in the market would stand the tests, and pass the examining officer. Not an ounce of genuine juice was to be bought in Liverpool, Birmingham, or Bristol.

This then being the case, naturally led to a great many analyses of samples from various quarters. The author was thus attracted to the present subject by the wide discrepancy between the result of his experiments, and the information published in our best books.

For instance, Pereira gives an analysis of lemon-juice by Proust, showing that it contained 1·77 per cent. of citric acid, or about 10 grains per ounce. The specific gravity is not mentioned. It is surprising that the statement should have been introduced into the last edition of that work. In our excellent "British Pharmacopœia," *freshly pressed* lemon-juice is said to have an average specific gravity of 1·039, and an average quantity of 32·5 grains of citric acid per ounce. These two do not agree; the specific gravity is too great for the acid. In Muspratt's "Dictionary," juice containing 7 per cent., or 31·5 grains per ounce, is termed very superior. In Mr. Watt's splendid work, 4·7 per cent., or 20½ grains per ounce is quoted as the amount. Muspratt says that lemons at an ealier part of the season are more acid, and as the season advances the water is a per-centage or two higher. All these statements are so greatly at variance with the results I have found, that I am induced to bring the subject before the Conference.

As will be seen, the Board of Trade have fixed very liberally for the vendors the specific gravity of 1·030 as the standard, and 30 grains per ounce as the *least* quantity of acid.

On February 25th of this year I bought a lot of lemons from six different shops, and after mixing them I pressed eight, which gave seven ounces of juice, having a specific gravity of from 1·040 to 1·046, and yielding 40 to 46 grains per ounce, or 9·6 per cent. of citric acid.

The specific gravity was taken by one of Griffin's hydrometers, as ordered by the Board.

	1	2	3	4	5	6	Average
Crystallized Citric Acid .	42·90	40·05	41·74	39·02	44·66	46·90	42·53
Gum and Sugar	3·45	2·39	3·03	2·96	3·67	3·64	3·19
Inorganic Salts	2·58	1·18	2·38	2·22	2·61	2·73	2·28
Total grains per ounce	43·93	43·62	47·15	44·20	50·83	53·27	48·00
Specific gravities ..	1·043	1·040	1·042	1·040	1·045	1·045	1·044

The remainder of the lemons was put aside till the end of May, and again examined. The result was thus:—

	1	2	3	4	5	6	Average
Crystallized Citric Acid .	40·90	39·65	39·66	36·38	43·93	45·77	41·04
Gum and Sugar	4·33	2·63	4·51	4·25	3·92	4·44	4·01
Inorganic Salts	2·58	1·18	2·38	2·22	2·61	2·73	2·28
Total grains per ounce	47·81	43·46	46·55	42·85	50·46	52·94	47·33
Specific gravities ..	1·041	1·039	1·040	1·038	1·044	1·044	1·041

It will therefore be observed, that as the lemons were kept, and the summer advanced, the quantity of acid decreased (at first slowly, but at length very rapidly), but the specific gravity only suffered comparatively slight diminution; the quantity of the juice also remained the same, for eight lemons yielded 7 ounces in May as in February.

On examining the remaining fruit in July the curious fact was ascertained, that although the specific gravity was 1·027, yet there was not a particle of citric acid. Analysis showed that it had all split up into glucose and carbonic acid.

Since this the nitrogenous matter in the juice has again set the whole into fermentation, The glocose has produced alcohol, and the alcohol acetic acid, thus:—

$$\underset{\text{Glucose.}}{C_{12}H_{21}O_{12}} = \underset{\text{Alcohol.}}{4\,(C_2H_6O)} + 4CO_2.$$

Then, after passing through the intermediate stage of aldehyde,

$$\underset{\text{Alcohol.}}{4(C_2H_6O)} + 80 = \underset{\text{Acetic Acid.}}{4(C_2H_4O_2)} + 4\,H_2O$$

This result you have before you on the table.

On examining a vessel containing a large quantity of lemon-juice, the peculiar earthy smell of carbonic acid is distinctly perceptible. For a clearer proof, a quantity of juice was put into a bottle which was connected by a glass tube with lime water, beneath which the glass tube dipped; all was hermetically sealed and laid aside, when the deposition of carbonate of calcium became sufficiently evident.

The decomposition would be explained thus:—

$$\underset{\text{Citric Acid.}}{3\,(C_6H_8O_7)} + 30 = \underset{\text{Glucose.}}{C_{12}H_{24}O_{12}} + \underset{\text{Carbonic Acid.}}{6\,CO_2}$$

This change is of course one example among many of the chemical transformations which take place in the maturation of fruits, and a striking one it is.

Freshly expressed lemon-juice is a thin, milky, slightly yellowish liquid, having a sp. g. from 1·040 to 1·045, and containing from 39 to 46 grains of citric acid per ounce. Should either of these be less, the lemons must have been kept too long or gathered too late in the season.

Liquor potassæ turns the juice a peculiar dark colour, well known to those accustomed to diabetic examinations.

When freshly pressed the smell is aromatic, but when kept for a few days acquires the mouldy flavour which the commercial juice usually possesses. Trommer's and Fehling's tests give a decided indication of glucose.

With polarized light the ray is turned to the right. Acetate of lead gives a muddy white precipitate (gummate of lead).

Chloride of barium, nitrate or acetate of potassium, or cloride of calcium should give *no* precipitate, indicating the absence of sulphuric, tartaric, or oxalic acids. The aroma of the pure juice is very peculiar, and differs as much from any artificial compound as rose-water distilled from the petals does from that made with otto.

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* Read before the British Pharmaceutical Conference, at Norwich.

The juice from limes is not so acid as that from lemons.

Through the kindness of a friend I obtained a dozen limes from Glasgow; from these I obtained 5¼ ounces of juice. This was very much more aromatic and more delicate in its flavour than lemon-juice. Its sp. g. was 1·067, and contained 32·22 grains per ounce. It was, therefore, not so strong as lemon-juice.

Messrs. Southall, of Birmingham, furnished a sample as coming from the Olveston plantation in Montserrat, which had a deep yellowish-brown colour; this, I presume, was given artificially, as that pressed by myself from the fruit was nearly colourless.

This coloration has since, however, been shown to have been accidental from the containing vessel.

A singular fact was communicated to me by D. Davis, Esq., Medical Inspector for Bristol, which was (at any rate, to me) quite new. Of course, all chemists are aware that when citric acid is *fused* with potassa it is decomposed into oxalic and acetic acids, thus:—

$$\underset{\text{Citric Acid.}}{C_6H_8O_7} + H_2O = \underset{\text{Oxalic Acid.}}{C_2H_2O_4} + \underset{\text{Acetic Acid.}}{C_2H_4O_2}$$

But when liquor potassæ is mixed with common lemon-juice *in the cold*, oxalic acid may be detected in a few days.

When lemon-juice is carefully evaporated it yields a rich brown extract, which is very peculiar both in smell, taste, and appearance, so much so that any one accustomed to make these experiments can in one moment tell whether or not it is a genuine juice.

An ounce of lemon-juice will average 27 grains of dry extract per ounce. After a certain point the extract becomes carbonized, having a rich brown colour and pleasant smell. This is owing to its partial decomposition into acetone, carbon, carbonic acid, carbonic oxide, and aconitic or pyrocitric acid.

$$2(\underset{\text{Citric Acid.}}{C_6H_8O_7}) = \underset{\text{Acetone.}}{C_3H_6O} + 2CO_2 + CO + \underset{\text{Aconite Acid.}}{C_6H_6O_6} + 2H_2O$$

It seems quite impossible to evaporate the juice to dryness without decomposition.

During the first six months of the present year a great number of samples of commercial juice were examined; the following are a few of them procured from London, Bristol, Liverpool, Leith, Birmingham, Newport, Cardiff, Southampton, etc., besides samples obtained from wholesale and retail druggists and importers of foreign produce. Some were plainly artificial, a few contained sulphuric acid, but most of them were merely diluted with water. The greater number of those obtained from the retail shops were artificial, and in no single instance stronger than twenty-four grains per ounce.

The following table is the result of twenty of these analyses made of samples from the places before mentioned. They are calculated as grains per fluid ounce:—

No.	Citric Acid.	Gum and Sugar.	Sp. g.	Adulterant, and Remarks.
1	25	3·10	1·026	Watered.
2	30	8·90	1·032	Artificial.
3	20	2·00	1·021	Watered.
4	28	2·00	1·028	Watered.
5	35	5·80	1·037	Artificial and Cane Sugar.
6	14	2·00	1·023	Artificial and Tartaric Acid.
7	15	1·99	1·016	Watered.
8	18	3·00	1·019	Artificial.
9	19	9·00	1·027	Artificial.
10	42	3·45	1·043	Genuine.
11	28	2·85	1·029	Watered.
12	19	13·52	1·022	Artificial.
13	42 22	6·50	1·014	Genuine.
	32·22	3·90	1·033	Genuine.
15	43·90	10 50	1·048	Genuine, but coloured with some extract.
16	29 5	2·90	1·030	Genuine, but reduced.
17	5·3	..	1·028	With Sulphuric Acid and Sugar.
18	40	3 60	1·042	Genuine.
19	32	3·44	1·033	Genuine.
20	30	1·59	1·030	Artificial.

Thus, it will be seen, that in no article was adulteration carried on to a greater extent than lemon-juice, and prior to the present Act a genuine sample was hardly ever obtainable.

The juice keeps its strength better separated from the fruit than in it. A good sample may be kept for years without sensible diminution of its acid, especially if fortified with spirit.

The cell-structure of the fruit seems to be the chief source of the fermentative matter, especially that part of the mesocarp that forms what is commonly called the white of the rind.

The ingredient in the juice, which is the therapeutic agent, seems to be a matter of dispute among medical men. Those who advocate Dr. Garrod's views—that it resides in the potash—must have a homœopathic idea of its value, and plenty of faith.

The analyses of many specimens of ash show only $\frac{3}{10}$ grain of potash per ounce. Others, with Dr. Tanner, and I think with more reason, rely on the citric acid as the chief means for curing scurvy.

The molecules of citric acid are very remarkable for their tendency to change, especially when sugar or gum is present. As remarked before with regard to lemon-juice, so a solution of crystallized citric acid cannot be evaporated to dryness without decomposition, even with a very gentle heat.

Like all seaport towns, a great many cases of scurvy are present in Bristol, and I have the authority of several of our leading physicians for saying that they find the crystallized citric acid as efficacious as lemon-juice (especially with fresh meat and vegetables) in curing that disease.

But as this question is more in the sphere of the physician than the pharmaceutist, it had better be left in their hands for solution.

Mr. H. S. **Evans** said, with reference to the alleged extensive adulteration of lemon-juice, that he knew there were at least two firms in Liverpool who imported this article direct from Messina. Upon its arrival, this juice could not pass the inspectors unless having 7 per cent. citric acid, and 5 per cent. alcohol. He had a good deal of experience in the examination of such imported juice, and had always found from 7·5 to 9 per cent. of citric acid and 4 to 5 per cent. of alcohol. But there could be no doubt that great adulteration was practised, and the Act had done much good by putting a check upon this. With regard to the case in which citric acid was said to have been used for fortifying weak lemon-juice, he (Mr. Evans) was disposed to query whether a scarcity of lemon-juice might not only justify such a procedure, but render it necessary.

The **President** confessed to have been much struck by facts brought forward by Mr. Stoddart to show that lemon-juice might contain no free citric acid. He considered that lemon-juice freshly squeezed was the only sort that should be used in pharmacy. The lemon-tree was a singular instance of a tree bearing fruit at all seasons of the year, its inflorescence proceeding simultaneously.

Mr. **Deane** reported his own procedure to be the following:—He laid in a stock of lemons when plentiful in spring, squeezed the juice, heated it to 180° F., and bottled it whilst hot in small bottles, that were then tied over with bladder. In this way the juice kept good for many months.

Mr. **Schacht** remarked upon the extreme interest of the question raised by the disappearance of citric acid. What had become of this?

Mr. F. C. **Clayton** gave some interesting particulars derived from an extensive acquaintance with the commercial aspects of the question. He said that the Board of Trade allow lemon-juice having a specific gravity of 1·003, whilst pure juice should be 1·004. A change of practice had lately occurred as to the addition of spirit, for, as white rum (which was formerly used) caused the juice to turn to a dark greenish-yellow, it was now omitted. With reference to the kindred subject of lime-juice, he had usually found this to have a density of 1·0048, and to give 11 ounces of citric acid per gallon. The practice now obtained of importing lime-juice in a concentrated state, having a density of 1·024. To test the effect of heat, he had evaporated 20 ounces of lime-juice to 2 ounces, then re-diluted, and found the density not to have changed.

Professor **Attfield** thought that the disappearance of citric acid in the manner suggested, namely, by conversion into glucose and other bodies, was to be regarded as one of the most important of Mr. Stoddart's observations, and demanded further attention. Referring to the therapeutic question, he trusted that members of the medical profession would institute experiments to decide whether the citric acid was the efficient agent, or the salts of potassium.

Mr. Groves said that the fruiterers recognised what they called "sweet lemons." Could it be that Mr. Stoddart had met with some of these? As to the preservation of lemon-juice throughout the year, he was well satisfied with a plan which he had long adopted, viz., adding two minims of chloroform to a fluid ounce of juice. When the juice was required for use, warmth was applied and the chloroform evaporated.

Mr. W. L. Scott stated that he had found acid oxalate of potash in lemon-juice in two instances, the amounts being 4 and 7½ per cent. respectively.

Mr. W. R. King, Mr. Searby, Mr. Caley, and Mr. Abraham also took part in the discussion.

Mr. Stoddart replied upon the whole debate. He said that the lemons which gave no citric acid had all the appearances of being perfectly sound. He was aware that in Italy there were "sweet lemons," of which both the peel and the juice were eaten. As to what became of the citric acid, he found that collaterally with his diminution there was an increase in the amount of sugar. That carbonic acid was also formed and eliminated through the rind of the fruit, he had proved by means of an air-pump and lime-water. He had never met with oxalic acid in lemon-juice. The difficulty in which they were placed could not be got over by squeezing the juice freshly at all seasons, for towards the summer months such juice did not contain the citric acid they required.

NOTE ON DEFECTIVE SAMPLES OF POTASH AND SODA-WATER.

BY B. S. PROCTOR.*

At the Nottingham meeting of the Conference I drew attention to several faulty samples of potash water which I had met with; and, as I have again met with equally faulty specimens in a lot which was sent as a sample hamper, I think it desirable to draw the attention of the Conference to the subject, both as a caution to the members, and with the hope that my occasional jottings may stimulate the production of the report on the mineral waters of commerce, which has been promised for some time past.

Soda-water.—A bottle, professing to contain 10 grains of bicarbonate, yielded, on evaporation, a residue weighing 4 grains, consisting of bicarbonate of soda with lime and organic matter, the latter being sufficient to give the residue a decided brown colour.

Potash-water.—The residue of a bottle weighed only 0·4 grain, and consisted of carbonate of soda, potash, and lime, and organic matter, the potash being present in only very small quantity. The pressure of gas was satisfactory in both cases.

It is an indication of a very unsatisfactory state of the aerated water trade that of five samples, examined at different times, not one proved to be what it ought to be,—and only two of the five were such as I had reason to suspect were at fault before the examination was made. In more cases than one I should have expected the name of the maker a guarantee of good quality.

Mr. Carteighe thought that the absence of soda from "soda-water" was a generally understood fact.

Mr. Groves had met with soda-water containing ten grains of soda in a bottle. The French name *eau gazeuse* was a much better one to apply to the beverage that did not contain an appreciable quantity of the alkali.

Mr. Atherton named having found about five grains of soda per bottle.

Mr. Ince insisted strongly that the soda-water of science and of commerce were two different things, and it was useless to attempt to reconcile them. The public got what they wanted in the soda-water of commerce.

Mr. J. D. Smith said it would be highly interesting if soda-water manufacturers would let the public know what soda-water contains.

Mr. A. J. Caley said that four years ago they manufactured soda-water with fifteen grains of soda per bottle, and people complained and said, "What is the matter with this soda-water—it tastes like soap." They then decreased the quantity of soda, and in proportion as they did so their trade increased. He could not state the exact quantity now dissolved, but perhaps it was the fraction of a grain. He thought it very desirable that people should not be supplied with soda-water with fifteen grains of soda in it, which he hinted might not be conducive to health. If a prescription, however, were ordered by a physician soda-water of a definite strength would be supplied.

Mr. Guyer objected to the assumption that no soda was present in soda-water. He knew large makers who asserted that they used ten grains per bottle.

Professor Attfield said that another paper on the same subject would have been presented but for the illness of the member who had undertaken the investigation.

GRANULAR CITRATE OF MAGNESIA.

BY F. C. CLAYTON.*

In bringing before the Pharmaceutical Conference a few notes on this subject, I must apologize for not having made my investigations so minute as could have been wished; but as there seemed no prospect of making them more complete by delay during another year, I submit them at the present meeting.

Granular citrate of magnesia has been an article of commerce for something over ten years, and a very interesting paper on it will be found in the "Pharmaceutical Journal," vol. i. second series, pp. 301-304, together with a discussion that took place on its being read at one of the evening meetings at Bloomsbury-square. The remarks there made upon its composition and mode of preparation are still to a large degree correct; but having had considerable experience in its manufacture, and also of comparing notes with other makers, it may be well to go over the ground *de nova*, first making a few remarks upon its name.

At the meeting above alluded to some exception was taken to the term "citrate of magnesia," as not really representing its composition, and the reason of its being called so has, I believe, never been cleared up.

I am, however, able to state, by the permission of Mr. Bishop (and I believe it is generally conceded that he is the original manufacturer), that when he first prepared it in 1857, he "used a good deal of neutral citrate of magnesia." He also writes me, "I had to abandon this plan, by finding the compound would not keep, soon losing its effervescence and colour."

Whilst speaking of the name, I would just note the "true citrate of magnesia," introduced by Mr. Dymond to the meeting of the Conference at Dundee, and which was for a while made as a granular preparation, but, having ceased to be so, it no longer comes within my province.

I now pass on to the *composition* of the granular citrate of magnesia, which, as Mr. Draper says, consists of—

$$\text{Soda and Magnesia.}\quad \left.\begin{array}{c}\text{Sulphuric,}\\ \text{Tartaric,}\\ \text{and}\\ \text{Carbonic}\end{array}\right\}\text{Acids,}$$

and, I may add, sugar and citric acid, and as a flavouring, essence of lemon.

The article analysed by Mr. Draper contained no citric acid: to use his own words, "the absence of citric acid . . . was also established." I have made several attempts myself to obtain a granular preparation without any, and I know others who have done the same, but have never succeeded. All the samples which I have examined contain it, and I think we may therefore conclude that *citric acid* is now always a constituent. That *sugar* enters into it is proved by the taste, although I know of one firm who for some years used the following formula:—

Sodæ Bicarb. .	. 16	oz.
Acid. Tartaric .	. 10½	,,
Acid. Citric .	. 5	,,
Magnes. Sulph. .	. 1	,,

with a little water to help the granulation. Any one tasting this would be at once struck with the difference between it and that now generally sold. The proportion generally varies from 6 oz. to 16 oz. of sugar to 16 oz. of soda, but in one or two cases I have found it to exceed that.

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* Read before the British Pharmaceutical Conference at Norwich.

* Read before the British Pharmaceutical Conference at Norwich.

As we are all aware, the trade in this article has increased enormously during the last few years, and at the same time the price has been reduced; the manufacturer therefore has had to turn his attention to the use of the cheapest materials.

The articles above enumerated are still all that are to be found in it, but they do not convey the information as to *how* they exist. It is at once evident that the maker must keep down the proportion of citric acid, and add as much sugar as possible; for while nothing, so far as my experience goes, will make a better preparation than equal parts of citric and tartaric acids, yet, when cost has to be considered,* it is very evident that the more expensive one must be replaced by something else.

Now, sugar, to a certain extent, promotes granulation, but it will not do alone. Water drives out too much gas, but in the use of a small proportion of sulphuric acid, or bisulphate of soda, the manufacturer can reduce his cost to a minimum. I believe the first mention of the use of bisulphate of soda is to be found in the *Chemical News*, vol. xvi. p. 269, by a Mr. Scott; but from the way it is mentioned, the writer did not, apparently, know much about it from experience. I do not remember to have seen the use of sulphuric acid recorded anywhere, though it has had a limited use, to my knowledge, for three years. I have not, however, found the employment of these articles so general as might be expected among the cheaper preparations, notwithstanding the publicity given to the suggestion. The use of citric acid alone makes the article so much more difficult to manufacture, and not so good for keeping or effervescence, that I believe none is now made; though, for a while, a house made and sold a ton or two of it. It is rather softer on the palate than when containing tartaric acid.

In concluding this part of my paper, I would recommend any one who wishes to imitate the articles now sold, to try the following formulæ:—

Sodæ Bicarb. . . .	16 oz.	16 oz.
Acid. Tartaric . .	8 „	10½ „
Acid. Citric . . .	8 „	4 „
Sugar	4–8 „	8–18 „
Magnes. Sulph. . .	0–½ „	0–1 „
Sodæ Bisulph. *Cryst.* .	...	2 oz. or 5 dr. fl.
Acid. Sulph. . . .	...	
Ess. Limonis . . .	q. s.	q. s.

On the Mode of Preparation.

The ingredients are mixed in the usual manner by sifting, and thrown on to a hot metal plate to a depth of not more than half an inch. In a few minutes the mixture becomes spongy, when it is worked about and turned over with a scoop or other convenient instrument, to prevent any particles becoming too dry.

In a minute or two more (this is the most delicate part of the operation, but impossible to describe on paper) it should be thrown on a cold slab, and put through a sieve of 4–6 meshes per inch, again heated and sifted through a rather finer sieve, the dust separated, and finally heated till desiccation is complete. It is well to watch it at first, to see that the newly-made granules do not adhere to each other; but during the latter part of the final drying this is unnecessary.

The metal plate may be of tin, enamelled iron, zinc, or tin, and I know all these are used, and very likely copper may do, but I have never heard of its use on the large scale. I would recommend zinc, from its cheapness; plates that have been in nearly constant use for two years are but slightly bulged,—the original cost being 39s., thus showing a great advantage over tin, and I know of nothing against it. *En passant,* a manufacturer with whom I was acquainted dried his preparation in a warm closet on skins of white leather, but the reason I know not.

The *modus operandi* above described may not be universal, but I have found it answer well, and seen it employed by other parties. It is best to sift the dust out before the article is dry, as the dust then works in well with the next batch. A batch should not be more than 30 lbs. to be well attended to, and the loss in making is from 10 to 12 per cent.

In conclusion, I must just refer to Sodæ Citro-tart., B.P. If this article is introduced on its own merits, I have nothing to say about it; but if as a substitute for granular citrate of magnesia, it is a decided failure, because it is too alkaline, and contains no sugar.

BIRMINGHAM, *August*, 1868.

The PRESIDENT (Mr. Hanbury) agreed with those who condemned the use of the term "citrate of magnesia" for such a compound as was now sold under that designation. On the Continent this name was applied to a true citrate of magnesia that was sold in the shops.

Mr. GROVES said that the dose of the true citrate of magnesia was very large, being about two ounces.

POISONOUS HOSIERY.

On the 29th ult., a Mr. Webber brought under the notice of the sitting alderman at Guildhall the fact that the dye used in some of the gorgeous socks and other underclothing displayed in the windows of metropolitan hosiers exercises a very deleterious influence upon the skins of the wearers, producing irritation and an eruption, and leading, if persisted in, to actual sores. The *Lancet*, in commenting on this startling statement, remarks that it is not absolutely novel. "Last year," says our contemporary, "during the time of the performance of the 'Doge of Venice' at Drury-lane Theatre, one of the *danseuses* applied to one of the metropolitan hospitals with an anomalous eruption affecting one foot and exactly those parts which are covered by an ordinary dancing shoe. It was immediately perceived that the heat of the foot, where covered by the shoe, acted upon the dye of the stocking—which the patient stated was of a brilliant red colour,—and thus affected the skin; but the absolute immunity of the opposite foot was not readily intelligible, until the fact was arrived at that the exigencies of the ballet necessitated another colour on the other limb. In this instance, it appeared that other performers who wore white hose beneath their coloured garments escaped all injury; and the patient's skin recovered its normal condition shortly after adopting this plan. We are glad to find, from Mr. Webber's statement, that the manufacturers of these dangerous articles are taking every step to abate the evil they might give rise to, by withdrawing them from the market; and we hope, therefore, that the profession will have but few opportunities of studying the eruption which follows their use."

In reference to this subject the *British Medical Journal* publishes the following interesting note on Arsenic in Aniline Colours from Professor Wanklyn, of the London Institution. It indicates clearly enough the source of skin-poisoning in magenta-coloured socks.

"It is generally known that some of the old crude magenta cake and liquor which was in the market some few years ago, shortly after the first bringing out of the dye, was largely contaminated with arsenic. But it is not generally known, even to chemists, that much of the beautifully crystallised magenta used to consist of arseniate of roseine, being not, properly speaking, contaminated with arsenic, but actually consisting of an arsenical compound. In the early part of 1863 (assisted by Mr. Robinson, who was my assistant at that time), I made an examination of the beautifully-crystallised magenta which was being manufactured in one of the largest coal-tar colour works in Europe, and found it to be arseniate of roseine, apparently chemically pure. The following is a comparison between the calculated numbers for pure arseniate of roseine and those actually found on making a combustion.

$C_{20}H_{19}N_3, AsO_3H.$

	Theory.		Found.
C_{20}	240	56·47	56·56
H_{20}	20	4·70	4·91
N_3	42		
As	75		
O_3	48		
	425	100·00	

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* This applies particularly at the present time, August, 1868, when tartaric is worth 1s. 3d. and citric 2s. 8d. per pound.

"Both the nitrogen and the arsenic were determined; and, though the numbers given were not by any means accurate, were still quite near enough to confirm the formula, $C_{20}H_{19}N_3$, AsO_3H.

"Since 1863, there have been great changes in the mode of purifying magenta; and I hardly think that this pure arseniate of roseine would be found largely to-day. Still it would be rash to assert that this kind of magenta has entirely disappeared from the market. But, be this as it may, there is reason to fear that most of the magenta, and also all those common blues and violets which are made from it, are more or less contaminated with arsenic. To mend the matter, it is not generally known to chemists, but is nevertheless quite true, that the mere detection of arsenic in aniline colours is not always easy—even when large quantities of arsenic are present; the aniline colours having the property of masking the presence of arsenic to a very great extent."

ADULTERATION OF MEDICINES.

BY F. MAHLA, PH.D.*

"THERE is no species of fraud so universal as that which, prompted by a sordid desire after" filthy lucre, "cheats mankind out of life and health."

Such was the expression of a writer who, more than a score and a half of years ago, published "Notes on Falsifications and Adulterations," hoping thus to prevent the sale of impure drugs and medicaments.

Any one examining the present condition of the drug market, will readily come to the conclusion that the attempts to falsify and adulterate have since then rather increased; for it has become almost as difficult to procure reliable medicines as it is impossible to discover the philosopher's stone. Under these circumstances, it is a duty to expose such frauds, in order to enable those who are interested, to protect themselves against them. With this view, I propose to publish from time to time in these columns, such adulterations as have come to my notice in the Chicago drug market. I am convinced the honest druggist, who strives to offer nothing but reliable goods to the public, and the physician who naturally expects certain results from rationally prescribed medicines, will assist me in my efforts.

Epsom Salts.—There is a large quantity of a spurious article in the market, which is nothing more than finely-crystallised glauber salt. It does not contain a trace of sulphate of magnesia. It may be recognised by the circumstance that it is perfectly free from bitterness to the taste, and that its aqueous solution produces no precipitate on adding first phosphate of soda and afterwards aqua ammonia.

Sal Rochelle.—An article purporting to be sal rochelle is now offered for sale, which contains at least 25 per cent. of sulphate of soda. This can be discovered by adding to a somewhat dilute solution of the suspicious salt a few drops of a solution of either nitrate of baryta or chloride of barium, and afterward c. p. nitric acid. The precipitate produced by the baryta salt must disappear on the admixture of the nitric acid if the salt is pure.

Vienna Glycerine.—I had occasion to examine this really beautiful-looking article, and found it contaminated with sulphate of lime (gypsum) and chloride of sodium (salt). It contained also considerable quantities of sugar.

The presence of the sulphuric acid of the gypsum can easily be made manifest, by adding to one sample a few drops of a baryta salt solution, and afterwards diluted nitric acid; that of the lime, by admixing to another sample a solution of oxalate of ammonia. The chlorine of the salt is discovered by the appearance of a white precipitate on the addition of nitrate of silver solution.

It is a little more difficult to demonstrate the fraudulent admixture of sugar. In order to do so, it is necessary to add about fifteen or twenty drops of diluted sulphuric acid to two or three drachms of the glycerine, previously diluted with its own bulk of water. This mixture is boiled over the spirit lamp for several minutes, when it is allowed to cool down. It is then mixed with a few drops of a solution of sulphate of copper, and as mush caustic potassa (liquor potassa) as is necessary to redissolve the blue precipitate which at first made its appearance. The whole is then gently heated over the spirit-lamp, when a copious brick-red deposit of suboxide of copper is thrown down. Pure glycerine will, under such treatment, not produce these phenomena.

Black Sulphuret of Antimony.—A quantity of powdered black sulphuret of antimony, purchased from one of our wholesale houses, was boiled with hydrochloric acid, in order to prepare the officinal "solutio antimonii terchloridi" (butter of antimony.) It was but incompletely acted on, and the solution, after cooling, was filled with numerous crystals, which on examination were recognised as chloride of lead. A portion of the black residue not taken up by the hydrochloric acid was also examined; it consisted mainly of sulphuret of lead (galena).

Pharmaceutical Society of Great Britain.

SESSION 1868—69.

INTRODUCTORY ADDRESS.

Delivered October 7, 1868,

BY HENRY B. BRADY, F.L.S., F.G.S.

THE duty which has been committed to me, by those who have charge of the interests of this Institution, is a very simple one: it is to say, on their behalf, a few earnest words of welcome, and perhaps of sympathy and monition, to those about to begin their curriculum of systematic instruction within these walls; to hold out the hand of friendly recognition to some of the students of past years, who take the opportunity of the first meeting of the session to be again amongst us, that they may live again for a moment their earlier student-life in the memories that crowd round each familiar thing. And surely, if aught that could be said might bind the young men who now throw in their lot with us in fellowship with those who have preceded them, might induce them to emulate the successes of some of their forerunners, or with increased opportunities to strive towards yet higher things, your Council would need no other justification in adopting this formality of an introductory address.

But before I devote myself to that special duty with which I have been charged, I may be permitted to express, very briefly, a few thoughts that have arisen in my mind on the present aspect of pharmacy in its social and ethical relations,—considerations which can scarcely be out of place when we reflect that the events of the past few months form the basis, on which the position of the rising generation of pharmaceutists must rest. We may be pardoned if on re-assembling after so eventful a recess, mutual congratulation should take the place of our customary greetings. In this interval another great advance has been made towards enlightened legislation in respect to pharmacy,—the greatest step, possibly, since the first recognition by the State in 1841 of the claims of special education as set forth in our Charter of Incorporation. We are no longer, as we were stigmatised in the House of Commons but the other day, a "mere voluntary association," but now stand in the same relation to Government as other professional bodies who hold compulsory examining powers. But with new powers and a correspondingly improved position, are associated new and increased responsibilities which must not be forgotten.

The latest Pharmacy Act is but the consummation of twenty years' steady effort in a fixed direction, and embodies the acceptance of principles the Pharmaceutical Society was founded to support: and we may well now pause for a moment to see exactly where we are—how we stand in respect to the community at large, and to the higher branches of the medical profession. The legislature has, with general approval, given to us as a body a certain monopoly on an educational basis, as it has done heretofore to lawyers, surgeons, and others. Now, with the horror that exists of anything like a protective policy, such a step could not have been taken without a prospect of some adequate advantage in return, and this is looked for in the increased safety that must accrue from having a specially educated body of men to perform certain duties,— precisely the same object, in fact, as that for which similar privileges have long been enjoyed by other professional corporations. There are still many matters left unsettled, which one day or other will need the attention of the Legislature, but in this one thing there is nothing more that can be done for us:—Parliament has done all that lies in its power to make pharmacy a profession. It rests with us, and most of all with our younger members, who will be the first to reap the full advantage of the newly accorded privileges, to qualify ourselves for the enlarged sphere opened to us. No mere curriculum of college instruction can impart that sort of intellectual cultivation and tone of thought that places a man above the category of tradesmen. This is true of the already recognised professions, much more so of us; and we may well look to those now commencing their studies, who in the course of nature may expect to see the new order of things that time must bring, to qualify themselves by closer mental training for that higher social position which it will be their own fault if they do not occupy.

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* Contributed to the *Pharmacist*, of Chicago, U.S.

Amongst the most gratifying features in our recent parliamentary experience are the absence of opposition on the part of the public, and the general approval with which the provisions of the Act have been received by the medical profession; the former testifies to the spread of intelligent views in respect to the just privileges of educational qualifications, as opposed to a specious misapplication of the principles of free trade,—the latter to the increased goodwill of the body with whom, most of all, it is our interest to work in harmony. We now and then have evidence that, even yet, there exists some remnant of an old jealousy. It sometimes shows itself in the correspondence columns of the medical periodicals, it may be traced in recent parliamentary debates, and we are conscious of it even in the proceedings of the Medical Council; and seeing that pharmacy can never take its right place until it is in complete harmony with the other divisions of medical practice, it is worth while to seek the cause of this lingering mistrust, and to learn how far it is remediable. The charges brought against us take a number of forms:—we are held answerable for the effects of the law in respect to patent medicines, for vexatious Excise regulations, and for other similar anomalies; but in whatever way it is surrounded, by whatever collateral circumstances it is supported, the complaint is invariably centred in the practice of "counter-prescribing."

I know this is delicate ground to enter upon in an assembly of pharmaceutists, but it embraces a question of infinite importance, which must be settled without reference to personal interest, real or supposed; and it is more than ever urgent at the present juncture that it should be fairly and openly met. So long as it can be said in the General Council representing the medical profession, as it was in effect said but a few months ago, that our efforts towards improving the status of pharmacy ought to be opposed, because they show no disposition to prevent chemists from acting as medical practitioners, there should be no mistake as to the views we entertain on the subject. It was not for us to introduce clauses into our Bill imposing impracticable restrictions of whatever sort, but it is for us to say, as we can say very distinctly, that the course our Society has consistently followed for the past thirty years has been to oppose all interference on the part of chemists with offices for which they have no qualification,—in other words, to promote to the full the distinction between *prescribing* and *dispensing* medicines. I am far from believing that any hard line of demarcation can be drawn between the medical sciences or the practices founded upon them: surgery, medicine, and pharmacy are as much an example of "continuity" as the development of species or the correlation of the physical forces: but I do urge that the offices pertaining to each department should, in common fairness, if from no better reason, be left to those who have special qualifications for their fulfilment. I trust I am distinctly understood that by this I do not animadvert on the occasional recommendation by chemists of simple remedies in cases of emergency, or for those little ills of daily life, commonly regarded as too trivial for anything beyond homely treatment. This is not what medical men complain of. What is deprecated is a deliberate trespassing in a province distinct from our own,—the interception of practice rightly pertaining to the qualified prescriber. We each have a duty in this matter, and my conviction is that the line of duty coincides with that of our own interest. I am well aware that there are some amongst us who uphold the state of things which still exists, more or less, in respect to counter-practice, urging in defence that their legitimate calling is injured by so many medical practitioners dispensing their own medicines. No doubt this is a grievance, but it is no defence. In a large number of instances it would be impossible for a medical man to practise without dispensing also, and in many cases in which we think a separation of the two functions would be easy we must make large allowances for a custom, strictly legal, which is often followed out of deference to the convenience of the public, even in opposition to the tastes of the practitioner. The relations between medicine proper and pharmacy have been till now so ill-defined that much forbearance is needed on all sides whilst things are settling into their proper order. Medical practitioners, from time immemorial, have been accustomed to dispense, indeed, time was when they alone were properly qualified for the purpose; and, for the state of things we desire, we must rely on the change that is gradually taking place in medical education, which tends more and more towards physiology and therapeutics, and concerns itself less and less with pharmacy and materia medica.

On the other hand we may fairly claim from the medical profession equal consideration, since we like themselves are but servants of the public whose ideas of right and wrong, in respect to medical advice, can only be reformed by a sort of educational process. Most of all it is for us to show that practice in those branches of medical science to which we are specially devoted, may safely be left in our hands, and in the mutual confidence thus established, the ground for jealousy will soon disappear.

The importance of these ethical considerations, read in the light of our new responsibilities, must be my apology for their introduction here, and the expression, however imperfectly, of the views I have endeavoured to bring before you, enables me with lighter mind to approach the main object of my address.

To you, gentlemen, who are assembled to-night as your commencement of student-life in this Institution, I speak on behalf of those who watch over its affairs, and in their name I bid you welcome—not in the mere formal expression of words prompted by a distant courtsey, but as to younger brethren in the same vocation, with the hearty grasp of new-found fellowship. *We* have in this relationship an almost equal interest with yourselves that you should reap the uttermost advantage, intellectual and social, from your connection with this School. You are met together here under widely differing circumstances, but with the same general object, that object being *systematic study*. I use the word *systematic* because it expresses the chief value of the sort of study you are about to engage in, and represents precisely the quality which most of you have not hitherto been able to attain. It is too often the case that the period of life which you are now entering upon is the only one in which general systematic study is possible. We may—nay, if we do rightly, we must—ever remain students; but the quest of knowledge, especially of scientific knowledge, during the intervals of business or in the moments spared from professional toil, is beset with difficulties, and the results obtained are of themselves fragmentary and unconnected. It is in after life that the man who has done his elementary work well and systematically reaps its full advantage; for he has ready a framework, more or less elaborate, in which each new truth finds a natural place. Possibly there is not one of you who has not an acquaintance with a number of facts in chemistry, materia medica, pharmacy, and even in botany; facts partially acquired by reading, but more by casual, I had almost said by accidental observation, whilst engaged in the practical duties of the laboratary or the dispensing counter. These are of but little value, from their want of connection, and inspire their possessor with no confidence so long as they are held with the unavoidable consciousness of the extent of the unknown by which they are surrounded and separated. The human mind, in respect to any particular department of knowledge, may be likened at the outset to a blank map of a country on which even the outline is but dimly traced, and its relation to surrounding states ill-defined. If we scatter a few landmarks over its surface to represent the items of knowledge obtained by the casual observation I have alluded to, we reflect the condition preceding systematic study. The object is then to cover the ground with these landmarks as completely as time and opportunity permit, and what is even more important, to lay down those principles which, like high roads, not only mark the way to the points that have been determined, but also show the connection between them. The facts you have already gathered may not even be your starting-point, but if not, you will find the right places for them somewhere in your progress, and as by the addition of fact to fact, of landmark to landmark, the surface-aspect of the region you are surveying becomes familiar, you will by degrees ascend to higher ground, and there obtain clearer views of its natural boundaries. The *amount of detail* you can impart to your work is no doubt partly dependent on the opportunities at your disposal and the bent of your mental powers, but its *accuracy and usefulness* depend on conditions entirely within your own command. Of these conditions the first in importance is *system,* or, to put it before you as it bears upon your own course, rather than in the abstract,—regularity in the attendance of lectures, demonstrations, and laboratory practice. Each step in scientific knowledge is dependent upon the one that precedes it, and bears an equally close relation to that which follows. To miss a single lecture in a course consisting of a hundred seems a trifling matter,—exceedingly trifling when under the spell of those allurements that are ever so near when human nature is weakest,—but the real loss is not to be measured by mere numerical proportion. It may easily happen that an acquaintance with a principle expounded in the neglected discourse is essential to the proper comprehension of many that follow. A German author, Richter, speaking of this sort of steady persistence in following out a well-devised course of education, concludes a paragraph with words like these, "Regularity is unity, unity is Godlike, only the Devil is changeable."

I have no desire to burden you with many precepts in respect to your mode of study, indeed, if I were sure I should be fully understood, I would put into one word all I have to say—be THOROUGH. The temptation to be content with surface-work, to accept the appearance for the reality, the gilt for the gold, is always great, but it is naturally strongest if the prospect of having to pass certain examinations be too prominently kept in view, or, from any cause, comes to be regarded as the aim and end of study. No one seriously supposes that any permanent advantage is derived from superficial study, or deliberately lays himself out for a course of smattering. Intentions are ever good at starting, but it needs a determined and sustained effort to resist the compromises between inclination and duty that soon begin to present themselves. Enthusiasm and the excitement attending a complete change of occupation will carry most young men through the first stage of student-life without much drain on their store of good resolutions, but there comes a period, after the vigour of the first dash has cooled, when the drudgery of learning seems far to outweigh the fruits of knowledge, and then it is that so many of these who begin with fair promise seem to fall away. It is in this interval of discouragement that the mind most needs the support of good resolutions, for it is only by degrees that a false estimate can be seen in a truer light. There are two allies waiting to help him who will persevere but a little longer,—the force of habit, which is each day gathering strength to make the dreariest routine bearable, and that principle, born of curiosity, which, with the gradual acquirement of knowledge, engenders an increasing thirst for more. It is in this stage that the temptation is strongest to be content with superficial study, when the attendance of lectures is apt to become a formal thing, accepted as a task, in the hope that just sufficient knowledge may be obtained for examination purposes. Shun so baneful a self-deception. The listless attendance of lectures can be of no real service. It is a mistake to suppose that another can teach you; all that the most gifted professor can do is, to show you the way to learn and to place before you facilities for the exercise of your own industry. The right acquirement of knowledge is an individual work that no man can perform for you. Two persons may easily attend the same lecture and give to it the same apparent amount of attention, and yet derive very different benefit from it. One will bring away indistinct general impressions such as the arguments and illustrations made on his mind at the moment; the other will have possessed himself of a clear and definite outline of the natural law, of which the arguments and illustrations were only intended as the support.

In learning a principle, strive to know the phenomena from which it has been deduced; in the acquirement of facts, seek to associate them with the laws by which they are explained. A problem which you have worked out for yourselves will remain your own; whilst one you have accepted easily on hearsay is likely as easily to slip from your memory. It has often been said, and it cannot be too often repeated, that "there is no royal road to knowledge." Truly there is no smooth highway, and the many tempting byeways that diverge from the straight course, green, sunny, and seductive, that promise to lead to the same goal, soon show, though winding and deceptive and not easily traced, that to whatever end they do lead, it is not the one desired. You may know them only by one fact—they always tend, just a little, downwards. The right road is up-hill,—rough near its outset, and marred by obstacles that at a little distance look formidable. These are surmounted by toil and perseverance, but the achievement brings new spirit into the work,—the byeways lose their fascination, and new difficulties are sought rather than avoided. The condition in which the drudgery of the onset becomes a labour of love is attainable by any of you, and until it is attained, scientific progress is hard and uncertain. Would you strive for it, the watchword is THOROUGH!

These remarks on the spirit of right study need some corresponding allusion to a subject not less important in its influence, namely, recreation. By recreation, I mean the employment of that considerable portion of the available time of each day which is not occupied by lectures, laboratory or museum work, and similar duties. Part of this leisure is properly given up to relaxation—that is, to amusement pure and simple; and, whilst pursued within right limits, so that the indulgence does not cause a distaste for more serious employment, no one will grudge the time so spent. It is the complete unbending that preserves the elasticity of the bow, and the mind requires equally its seasons of relief from strain. But it is necessary to bear in mind that amusement is no part of your present object, and it should be regarded as an indulgence, sometimes admissible, rather than as a primary consideration in student-life. It would be impossible to lay down a distinct line between right and wrong amongst the recreations which lie within that moral law whose obligations we all admit. Amusement, harmless to one, may from the fascination it exercises over a differently constituted mind, be baneful to another. Mental and physical requirements differ in each individual, but one axiom is true alike for all,—when a pursuit, however harmless it may appear, presents attractions that lead to the neglect of duties, or when it is followed by a reaction of listlessness and enervation, it proclaims its own unsuitability. Take amusement in moderation, and of such a sort as leaves the appetite for study unimpaired. Bear in mind that self-denial brings its own speedy reward.

I do not hold, as many appear to do, that London differs materially from other great cities in its moral atmosphere. It is true that in some respects temptations are more rife, but it is as least equally true that opportunities for good are more conspicuous than in smaller places. There is a larger choice for both good and evil, and in no respect is this more manifest than in the range of amusement. Still there is a lesson to be drawn from the saddening as from the cheering experience of the past, and those whose connection with this school enables them to dwell on former Sessions, will call to mind many instances of students who, whilst conducting themselves with general and ostensible propriety, have failed to take the position foreshadowed by the earlier portion of their course, through disregard of the proper relation of amusement to study. We need not wonder that this has been so, for ability to withstand the attraction of pursuits innocent in themselves implies an amount of self-denial which mental discipline alone can give, but we may draw from it the reiterated warning that things intrinsically harmless become a snare in proportion to their seductive influence on the individual.

But if this light sort of amusement is to absorb so small a fraction of the time not occupied under the direct supervision of teachers, how is the remainder to be employed? When the mind has about it the vigour of youth, change of occupation is of itself relaxation. Each of you desires to be something more than a mere chemist and druggist,—to take a position in society quite apart from that gained by technical ability. This is what must be kept in view in determining the employment of your leisure. As far as opportunities permit, cultivate a taste for literature and general science. A fair knowledge of our English classics is, at the present day, almost essential to one laying any claim to a respectable education, and assuredly there is no mental training, except the direct observation of the works of God, that is at once so varied, so ennobling, and so instructive, as that to be derived from the writings bequeathed to us by the great men whose inner life they portray.

Of the cultivation of scientific tastes, or rather of those departments of science which depend on the direct observation of natural objects and phenomena, I hesitate to speak, for I have before me the words of Sir Philip Sydney, in the introduction to his 'Apologie for Poetrie'—"*Selfe-loue is better than any guilding to make that seeme gorgious wherein our selues are parties;*" and I dare only urge what I have to say, in so far as it is a well-supported testimony, not on the ground I should have preferred—that of personal experience.

I will not allude in any prominent manner to botany, for in some of its many bearings it will, happily, form a part of your daily work; and its claims as a study and a recreation have been alike ably set forth on many occasions by one who will not fail to present them to you in their clearest light. I owe too much to the teaching of Professor Bentley to dare to follow him in an exposition of the advantages to be derived from the pursuits with which he has identified himself. I wish now to take a far wider ground, and without indicating any individual group of created things, as more worthy than the rest of loving regard and intelligent observation, I would only urge a general claim on their behalf. The advantage of employing some part of your leisure time on subjects collateral with those which occupy you in class, is even greater than might be looked for. The history of the animal and mineral kingdoms cannot be unimportant in its bearings on the branches of science which occupy the chief part of your attention. Zoology has the closest relationship to botany, mineralogy to chemistry, and if denied the opportunity of pursuing either line of observation in the field, there is still left for you the microscope, which, from the most accessible materials, will open to you a new world of wonder and delight, and one which will lead you, as you become adepts in what Schleiden calls the "art of seeing," to those still too-little-cultivated departments of research,—micro-chemistry and micro-pharmacy.

The additions you may thus make to your store of facts are of themselves valuable; but far more so is the interest awakened by a voluntary pursuit of this sort. It is a ray of sunshine which soon spreads beyond its first narrow range, till it brightens even those dull chapters which are inevitable portions of all routine study.

There is yet another aspect in which study of natural science is even more important,—just as a healthy tone of mind is of greater price than intellectual accomplishment,—I allude to its soothing and humanizing influence, which seems intended as the natural antidote to the worry and the rough usage of the world. The lesson drawn from the "lilies of the field" had, possibly, a wider significance than even those to whom it was addressed could fully appreciate. It was from deep experience that our great poet-philosopher could say:—

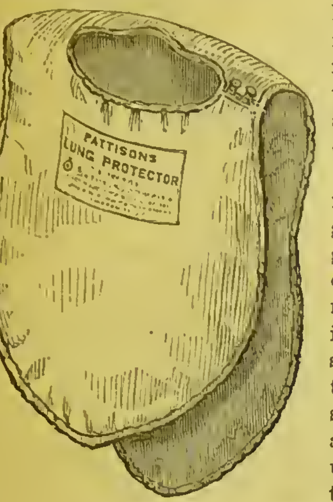
"That Nature never did betray
The heart that loved her; 'tis her privilege,
Through all the years of this our life, to lead
From joy to joy: for she can so inform
The mind that is within us, so impress
With quietness and beauty, and so feed
With lofty thoughts, that neither evil tongues,
Rash judgments, nor the sneers of selfish men,
Nor greetings where no kindness is, nor all
The dreary intercourse of daily life,
Shall e'er prevail against us, or disturb
Our cheerful faith, that all which we behold
Is full of blessings."

Some will be disposed to urge that the standard I have set is a high one, and I do not affect to deny it. Better to strive towards high attainment, even though we may, through human weakness, fall short of it, than to rest contentedly on a lower level. Life is ever a compromise between the aspirations of our best moments and the obstacles that mar their fulfilment; and the higher the aim, when coupled with honest endeavour, the better the accomplishment. To some are given larger, to some smaller opportunities, but the same responsibility pertains to all, that they should be employed to the utmost, whether in the greater or the humbler sphere. If it were not for the fear of saying too much, I might, in conclusion, try to draw a picture for the encouragement of even the youngest here,—a word-picture from actual life, that would be a justification for even more than I have said. I would tell you of one gone from us who still lives in the memory of some now present; of one who, with fewer privileges of early education than most of you, and dependent on the same avocation as ourselves for his livelihood, yet attained a name and an influence that the greatest might envy. Born in Spitalfields, a hundred years ago, engaged in early life in an uncongenial occupation, and, even at the age of seventeen, scarcely in a position to anticipate that pharmacy would be his calling, and still within a few years—diligent alike in matters of business and in pursuits beyond the pale of its multifarious demands—in the front rank not only as a pharmaceutist, but in scientific and social relations. Take an opportunity of looking at the portrait that hangs over the mantelpiece of our Council Room, of William Allen, the first President of this institution, who, dying at a venerable age, did but see the Society through its first infancy, and gave it his blessing. You may trace even in the picture his philosophic calmness and large-hearted benevolence. I should the more have liked to have read to you the lesson of his life, because, by his loss at so early a period of our history, his name is not associated with the great struggles in which we have been engaged, and stands in danger of being overlooked amongst us. I have said that his youth gave him no special advantages either pecuniary or educational; he had to *work his way* (we know what that means) to succeeding positions of increased responsibility in that well-known pharmacy in Plough Court, of which he eventually became the principal, and with which his name is inseparably connected. With all this he ever found time for something beyond mere business; and whilst his name is most familiar to us as leader in our own profession, he is, out of our Society, regarded rather as the man of science, whose memoirs on Carbon, on Carbonic Acid, and on Respiration, were amongst the finest researches of their day—as the friend and associate of Davy, Wollaston, Berzelius, De Luc, and others of that noble fraternity of chemists and physicists—as the brilliant and fascinating lecturer on chemistry at Guy's Hospital and the Royal Institution;—or, on the other hand, as the philanthropist, labouring hand-in-hand with Clarkson, Brougham, Wilberforce, and the rest of that devoted band to whom civilization owes the suppression of the slave-trade, the amelioration of a barbarous penal code, and the initiatory steps in the spread of education. If success in its best sense be what you look for, surely such a career is worth emulation, and there is but one means through which it may be attained,—a means that will certainly bring its reward, whether it be precisely in the way we look for it or not; call it diligence, devotion, earnestness, or that combination of all comprised in the word *thorough*; or, if you will, take home to yourselves that older injunction of King Solomon, "Whatsoever thy hand findeth to do, do it with all thy might."

A Green Colour for Sweetmeats.—Professor Artus gives the following formula for a beautiful green colour devoid of poisonous properties. 5 grs. of saffron are shaken up with a ½ oz. of distilled water, and the mixture allowed to stand twenty-four hours; at the same time, 4 grs. of indigo carmine are shaken up with ½ oz. of distilled water, and the mixture also allowed to stand for twenty-four hours. At the end of this time, the two solutions are mixed together, and a very fine green solution, capable of colouring five pounds of sugar, is produced.

NOTES OF NOVELTIES

PATTISON'S LUNG PROTECTORS.



Chemists will not need to be reminded that the season has arrived for them to replenish their stock of respirators, warm plastors, chest protectors, and other winter sundries. Mr. Pattison has called our attention to a new form of the latter goods, which he has registered under the title of Lung Protectors. The new feature of these is in the shape. As will be seen from the sketch, they are cut out of a single piece, and the back, as well as the front, fits up close, though not so as to give any inconvenience. We certainly agree with the inventor, that this offers a much greater protection to the respiratory organs, as, though the fact is generally overlooked, a cold may as easily be taken through the exposure of the back as the front of the thorax.

RIMMEL'S PERFUMES.

Mr. Rimmel has lately introduced two new perfumes with very taking names. One is dedicated, by her express permission, to Mdlle. Adelina Patti, and bears the appropriate title *La Nouvelle Marquise,* thus signalising the most important triumph which this European favourite has achieved. *La Grande Duchesse* is a similar compliment to Mdlle. Schneider. The label on each has a coloured photograph of the lady in whose honour it has been designed, and we need not add that the contents of the bottles are worthy of the care bestowed upon the exterior.

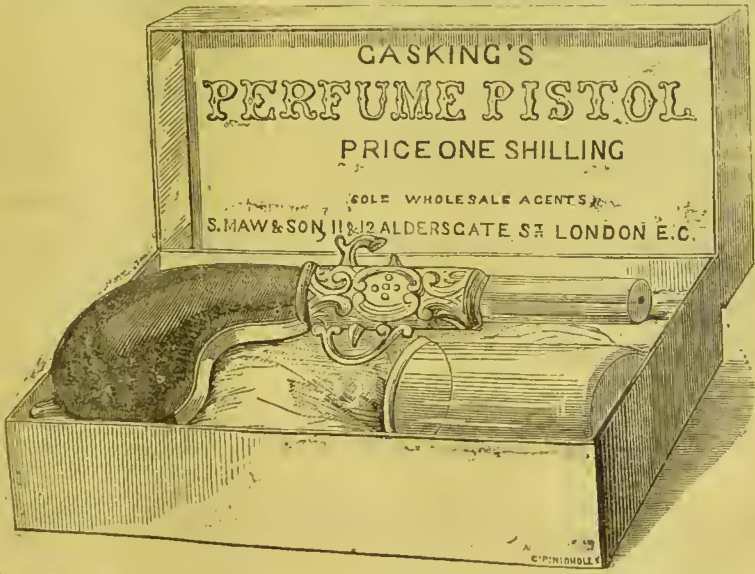
COLLECTION OF PHARMACEUTICAL SPECIMENS.

Messrs. Southall, Son, and Dymond, of Birmingham, have hit on a good idea, and one which will be appreciated by those who aspire to be well acquainted with their business. They announce that they have prepared a case containing a number of characteristic specimens of Materia Medica, and though we have had no opportunity of seeing this, nor do we know anything of it beyond the information obtained from their advertisement, we are so confident of the value of the idea, and at the same time so satisfied of Messrs. Southall's ability to carry it out carefully and thoroughly, that we are willing to risk our own reputation by recommending this collection to the notice of students, and, indeed, of all connected with Pharmacy. In no sense can the money thus spent be considered wasted, for the drugs themselves will be at least of some value, and the small remaining balance will be a profitable investment if it teaches any chemist how to distinguish a good specimen from an inferior one.

GASKING'S PERFUME PISTOL.

(*Agents—Messrs. Maw and Son.*)

The accompanying sketch shows the design of this pretty little apparatus. The stock of the pistol is an india-rubber ball, which can be easily filled with perfume, and this, by pressure, is at once forced in a thin spray through a narrow tube in the glass barrel. The weapon is neither an offensive nor defensive one, but will, no doubt, be very popular at Christmas parties this season. It is very cheap, and a great advantage of selling such apparatus is that they necessarily increase the consumption of the scents which they diffuse.



REVIEWS

Sale of Poisons Book. J. Davis, Old Kent Road.
Register of Poisons Sales. Evans, Lescher, and Evans, Bartholomew Close.
Sale of Poisons Register Book. J. F. Wilkinson, Pendleton.

Three more Poisons Books, of equal merit with those noticed last month, have reached us. They are evidently perfectly adapted for carrying out the provisions of the new Pharmacy Act with respect to the registration of Poison Sales. Davis's book contains a full copy of the Act, and much information useful to chemists and druggists. In Wilkinson's book a separate form for each sale is given, as in Siverlock's register.

Corner for Students.

CONDUCTED BY J. C. BROUGH, F.C.S.

The chemical formulæ employed in this section are based upon the new system of atomic weights, unless the use of the older system is specially indicated. In the *British Pharmacopœia* the symbols corresponding to those adopted here are printed in heavy Clarendon type.

PRIZES.

THE First Prize offered for Solutions to our September questions has been awarded to

BENJAMIN T. SUMNER, 6, Bull Ring, Horncastle.

For the Second Prize two competitors have equal claims, and we therefore break through our usual rule and award two Second-class Prizes; one to

GEORGE CLEGHORN (*W. X. Y.*), Cupar Fife;

and the other to

JOHN GREGORY, Stockton-on-Tees.

We again offer two scientific books as prizes for the best solutions of the problems printed below.

QUESTIONS.

PHARMACEUTICAL CHEMISTRY.

I. ACIDUM HYDROCYANICUM DILUTUM, *B.P.*—Describe in words and represent symbolically the chemical reaction by which hydrocyanic acid is formed in the officinal process.

II. OBSOLETE NAMES OF SALTS.—Give the modern Latin pharmaceutic names of the following salts:—Sal amarum, sal polychrestum, sal martis, sal mirabile, sal tartari, lapis infernalis.

PHARMACY.

III. GLYCERINE IN OINTMENT.—What is the readiest method of incorporating glycerine with lard or simple ointments?

GENERAL CHEMISTRY.

IV. DECOMPOSITION OF SULPHATE OF COPPER.—If a crystal of sulphate of copper be dissolved in cold water and a few drops of liquor sodæ be added to the solution, a delicate blue powder will be precipitated. Represent the reaction by a symbolic equation.

V. OXYGEN.—A receiver having the capacity of 13 litres is filled with oxygen at the temperature of 12° C. Required the weight of the oxygen, in *grammes*. [See Data below.]

VI. GASEOUS AMMONIA.—Ten litres of gaseous ammonia at the temperature of 15° C. are required. What weight of ammonic chloride, in *grammes*, is needed for their production? [See Data in September number and below.]

VII. CARBONIC OXIDE.—Fifty *grammes* of crystallised oxalic acid are decomposed by sulphuric acid. How many litres of carbonic oxide, at the normal temperature and pressure, are evolved? [See Data in September number.]

VIII. CHEMICAL SYMBOLS.—Explain the following equations, giving the names and relative weights of the bodies which are symbolically represented:

(*a*) $Cl_2 + H_2O = HCl + HClO.$
(*b*) $BaCl_2 + H_2SO_4 = BaSO_4 + 2\,HCl.$
(*c*) $NaCl + H_2SO_4 - HCl = HNaSO_4.$

SPECIFIC GRAVITY.

IX. SPIRIT.—A body, weighing 300 grains, sinks to the same depth in water and in spirit, when loaded with 80 and 17 grains respectively. What is the specific gravity of the spirit?

X. LIQUOR POTASSÆ.—Five fluid ounces of the officinal liquor potassæ are diluted with three fluid ounces of water. Required the specific gravity of the mixture.

DATA.

EXPANSION OF GASES BY HEAT.—Regnault has proved by numerous experiments that 1 volume of air at 0°C. expands 0·003665 for every increase in temperature of one degree of the Centigrade scale; thus, 1 volume at 0°C. becomes 1·003665 volumes at 1°, 1·00733 at 2°, 1·010995 at 3°, and so on. This decimal fraction 0·003665, which is called the *coefficient of expansion of air*, is represented with sufficient accuracy by the vulgar fraction $\frac{1}{273}$, and as the coefficients of expansion of different gases are very nearly equal, the relation of gaseous volume to temperature may be thus broadly expressed:

Every gas expands $\frac{1}{273}$ *of its volume at 0°C. for every increase in temperature of one degree of the Centigrade scale.*

Thus 273 volumes of a gas at 0°C.
become 274 ,, ,, 1° ,,
275 ,, ,, 2° ,,
276 ,, ,, 3° ,,
277 ,, ,, 4° ,,
or 273 + *t* ,, ,, *t*° ,,

For example, 2 litres of hydrogen at 0°C. when heated to 15°C. will occupy the volume of 2·10989 litres, for

Vols. at 0°.		Vols. at 15°		Litres at 0°.		Litres at 15°.
273	:	273 + 15	::	2	:	x;

$\therefore x = 2·10989.$

ANSWERS.

[*See Questions in September number, page 566.*]

PHARMACEUTICAL CHEMISTRY.

I. AQUA DESTILLATA, *B.P.*—The absence of an appreciable residue on evaporation implies the absence of *non-volatile substances*, organic and inorganic. The chief impurities excluded by the sulphuretted hydrogen test are *lead*, *copper*, *tin*, and other metals whose sulphides are insoluble in water. By the ammonic oxalate test *lime*, and soluble *calcic*, *baric*, and *strontic salts* are excluded. The argentic nitrate test excludes *hydrochloric acid* and *chlorides*; the baric chloride test, *sulphuric acid* and *sulphates*; and the calcic hydrate test, *carbonic acid* and *carbonates*.

II. ACIDUM NITRICUM, *B.P.*—The weight of pure caustic potash required for the neutralisation of 1 fl. oz. of the officinal nitric acid is 386.556 grains; and the weight of potassic nitrate formed is 697·181 grains.

The sp. gr. of the officinal acid is 1·42, consequently 1 fl. oz. weighs 437·5 × 1·42 = 621·25 grains. We have stated in a former number (March, p. 158) that this officinal acid may be represented by the formula $2HNO_3.\,3H_2O$, hence we may represent its neutralisation by caustic potash symbolically:

$$2HNO_3.\,3H_2O + 2\,KHO = 2KNO_3 + 5H_2O.$$

Taking the weights represented by the first two groups of symbols, with the weight of 1 fl. oz., we obtain the proportion 180 : 621·25 :: 112 : x;
$\therefore x =$ 386·556 grains
(*weight of potash required*).

Again, taking the weights of the first and third groups of symbols we obtain the proportion
180 : 621·25 :: 202 : x;
$\therefore x =$ 697·181 grains
(*weight of nitrate produced*).

GENERAL CHEMISTRY.

III. PRECIPITATION OF COPPER.—The weights of FeS and of HCl required for the production of sufficient sulphuretted hydrogen to precipitate 369·9 *grammes* of $CuSO_4$, are 218·979 and 181·653 *grammes* respectively.

The production of sulphuretted hydrogen may be thus expressed:

$$FeS + 2HCl = H_2S + FeCl_2.$$

The precipitation of cupric sulphate by sulphuretted hydrogen is represented by the equation:

$$CuSO_4 + H_2S = CuS + H_2SO_4.$$

Now, as one molecule of ferrous sulphide FeS = 88, gives sufficient sulphuretted hydrogen to decompose one molecule of cupric sulphate, $CuSO_4$ = 159·5, we have the proportion

159·5 : 369·9 :: 88 : x; $\therefore x =$ 218·979 *grammes* FeS.

Again, as the molecule of ferrous sulphide requires two molecules of hydrochloric acid, 2HCl = 73, for the reaction which gives the sulphuretted hydrogen, we have the proportion

88 : 218·979 :: 73 : x; $\therefore x =$ 181·653 *grammes* HCl.

IV. NITRIC OXIDE.—The production of this gas from nitric acid and copper is represented by the equation

$$Cu_3 + 8HNO_3 = 2NO + 3Cu(NO_3)_2 + 4H_2O.$$

By substituting for the first three formulæ the weights which they respectively denote, we find that 190·5 parts of copper react with 504 parts of nitric acid to form 60 parts of nitric oxide. The weight of nitric acid required to form 10 *grammes* of nitric oxide is accordingly found by the proportion

$$60 : 10 :: 504 : x; \quad \therefore x = 84 \text{ grammes (nitric acid).}$$

Again, the weight of copper required is found by the proportion

$$60 : 10 :: 190·5 : x; \quad \therefore x = 31·75 \text{ grammes (copper).}$$

[Two or three of our correspondents give a much more simple solution. They take the relative weights of the formulæ in the above equation as *grammes*, and dividing them by 6 obtain at once the above results; for 2NO = 60, and 60 ÷ 6 = 10, the number of *grammes* of nitric oxide required.]

V. WEIGHT OF A LITRE OF GAS.—The required weights are thus obtained:

		Litres.		Grammes.		Litre.		Grammes.
Ammonia	NH_3	22·38	=	17	∴	1	=	·7596
Chlorine	Cl	11·19	=	35·5	∴	1	=	3·1725
Ethylene	C_2H_4	22·38	=	28	∴	1	=	1·2511
Hydrogen	H	11·19	=	1	∴	1	=	·0894
Nitrous oxide	N_2O	22·38	=	44	∴	1	=	1·9660

VI. VOLUME OF A KILOGRAMME OF GAS.—The required volumes are thus obtained:

		Grammes.		Litres.		Grammes.		Litres.
Carbonic anhydride	CO_2	44	=	22·38	∴	1000	=	508·636
Carbonic oxide	CO	28	=	22·38	∴	1000	=	799·286
Oxygen	O	16	=	11·19	∴	1000	=	699·375
Sulphurous anhydride	SO_2	64	=	22·38	∴	1000	=	349·687

VII. COMBUSTION OF ETHYLENE.—For the complete combustion of a litre of ethylene *three* litres of oxygen are needed, and *two* litres of carbonic anhydride are formed.

The combustion is represented by the following equation:

$$C_2H_4 + O_6 = 2CO_2 + 2H_2O;$$

and this shows us that 2 vols. of ethylene combine with 6 vols. of oxygen, to produce 4 vols. of carbonic anhydride and 4 vols. of steam.

SPECIFIC GRAVITY.

VIII. FLOATING CYLINDER.—The sp. gr. of the spirit is ·8.

Let x be the area of the base of the cylinder;
then $3·2 \times x =$ volume of water displaced by cylinder.
and $4 \times x =$,, ,, spirit ,, ,, ,,

$$\therefore \text{sp. gr. of spirit} = \frac{3·2 \times x}{4 \times x} = ·8.$$

IX. METAL.—The weight of the metal is 69 oz.; its sp. gr. is 6·9.

Avoiding algebraic expressions we offer the following solution:—The difference between the weight of the metal in water and its weight in alcohol is 2 oz., and this is necessarily the *difference* between the weights of the displaced volumes of the two liquids. Then as the specific gravities of the water and the alcohol are respectively 1·0 and ·8, the weights of water and alcohol required to show this *difference* of 2 oz. are obviously 10 oz. and 8 oz. But the actual weight of a body = its weight in water + the weight of the water displaced

$$\therefore 59 + 10 = 69 \text{ oz. } (\textit{the weight of the metal}).$$

$$\text{and } \therefore \frac{69}{10} = 6·9 \ (\textit{the sp. gr. of the metal}).$$

X. WEIGHT HANGING IN WATER.—The increase of pressure would be half-a-pound.

A pound of a substance whose sp. gr. is 2·0 would necessarily displace half-a-pound of water; in other words, half its weight would be sustained by the water contained in the vessel, and half by the string.

TO CORRESPONDENTS.

⁂ All questions forwarded to us for publication in this "Corner for Students" should be accompanied by the answers which the propounders believe to be correct. As a rule, numerical results should be worked out to three decimal places. Communications should reach us at least *ten days* before the date of publication, and include the names and addresses of the writers.

J. Treharne.—In III. you have miscalculated the weight of HCl required. In V. there is a trifling error, evidently resulting from hasty computation.

R. J. Moss.—You have evidently misunderstood the intention of question I.

W. B. J.—Be kind enough to arrange your solutions in a more orderly fashion.

Struggler.—Your answer to X. is erroneous, as you may convince yourself by placing a vessel of water in the balance and hanging a weight in the water.

E. D. W.—In your solution of V. you have not adopted our standard of volume.

A. Nicholls.—In II. you have mistaken the pure nitric acid for the officinal acid.

Marks Awarded for Answers.

	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	Total
B. T. Sumner (*1st prize*)	6	8	7	0	7	7	7	4	8	5	68
W. X. Y. (*prize*) ..	5	7	7	8	7	7	7	4	8	5	65
J. Grogory (*prize*) ..	6	6	7	9	6	7	7	4	8	5	65
J. Troharno	6	8	3	0	6	7	7	5	8	5	64
O. A. Steeds	5	7	7	8	7	7	7	1	7	5	64
W. B. J.	3	7	7	9	7	7	6	4	8	5	63
J. W. B.	6	4	7	8	7	7	7	4	8	5	63
T. W. L.	5	4	7	9	7	7	7	4	8	5	63
W. H. Weddell.. ..	6	4	7	8	7	7	7	4	8	5	63
R. J. Moss	0	8	7	9	7	7	7	4	8	5	62
A. Fraser	5	6	5	9	7	7	6	4	8	5	62
E. D. W...	7	8	3	8	4	7	7	4	8	5	61
W. Greig..	6	0	7	8	7	7	7	4	8	5	59
Strugglor	5	7	7	8	7	7	6	4	8	0	59
G. P.	6	0	7	6	7	7	7	4	8	5	57
H. Habgood	6	0	6	8	7	7	6	4	7	5	56
A. Nicholls	3	0	7	8	7	7	7	4	8	6	56
O. Pegler	6	0	7	4	7	7	6	4	8	5	54
J. A. Kendall	6	5	5	0	7	7	7	4	8	5	54
Proprionamido.. ..	5	0	3	7	6	6	7	4	8	5	51
Auditor	5	0	6	8	7	7	6	4	0	5	48
R. M. Harding ..	6	0	—	4	7	7	7	4	8	5	48
J. Paulin	3	7	5	8	7	8	7	4	0	0	44
A. J. Pepper	0	0	4	7	5	5	6	4	8	5	44
J. J.	5	0	0	8	7	7	6	4	0	5	42
J. D. D. Thomas ..	5	0	4	—	7	7	7	0	7	5	42
J. P. Gibson	5	—	—	—	6	7	—	4	8	5	35
T. Smailes	6	0	0	0	6	6	7	4	—	5	34
R. P. Collins	5	2	—	—	—	—	—	—	—	—	7
An Apprentice.. ..	5	—	—	—	—	—	—	—	—	—	5

Books offered as First Prizes.

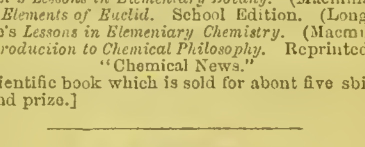
Attfield's *Introduction to Pharmaceutical Chemistry.* (Van Voorst.)
Conington's *Handbook of Chemical Analysis;* with Tables of Qualitative Analysis adapted to the same. (Longmans.)
Eliot and Storer's *Manual of Inorganic Chemistry.* (Van Voorst.)
Ganot and Atkinson's *Elementary Treatise on Physics.* (Longmans.)
Garrod's *Materia Medica;* with Modern Chemical Notation. (Walton.)
Noad's *Chemical Analysis, Qualitative* and *Quantitative.* (Reeve.)
Northcote and Church's *Qualitative Analysis.* (Van Voorst.)
Royle and Headland's *Materia Medica.* (Churchill.)

[Any other scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.]

Books offered as Second Prizes.

Church's *Laboratory Guide for Students in Agricultural Chemistry.* (Van Voorst.)
Galloway's *First Step in Chemistry.* (Churchill.)
Hofmann's *Introduction to Modern Chemistry.* (Walton.)
Oliver's *Lessons in Elementary Botany.* (Macmillan.)
Potts's *Elements of Euclid.* School Edition. (Longmans.)
Roscoe's *Lessons in Elementary Chemistry.* (Macmillan.)
Wurtz's *Introduction to Chemical Philosophy.* Reprinted from the "Chemical News."

[Any other scientific book which is sold for about five shillings may be taken as a second prize.]



THE SANDFORD TESTIMONIAL.

On the evening of Tuesday the 6th inst., a meeting of chemists and druggists was held at 17, Bloomsbury Square, for the purpose of giving effect to the following resolutions, passed at a sitting of the British Pharmaceutical Conference at Norwich:—

"That the cordial thanks of this Conference and the whole Profession are due, and are hereby tendered, to the President of the Pharmaceutical Society, and those who have laboured with him, for those exertions in the cause of Pharmaceutical Education which have resulted in the Pharmacy Act of 1868." [Proposed by Mr. Reynolds of Leeds, seconded by Mr. Searby of Norwich.]

"That it is desirable there should be some public recognition of the services rendered to the cause of Pharmaceutical Education, and the improvement of the status of the Profession, by Mr. GEORGE WEBB SANDFORD, President of the Pharmaceutical Society, to whose careful and constant devotion the passing of the Pharmacy Act of 1868 is in great measure due."—[Proposed by Mr. J. D. Smith, and seconded by Mr. Caloy, both of Norwich.]

The Chair was taken by Mr. Daniel Hanbury, the President of the Conference, and the assembly comprised a large number of influential members of the trade.

With the view of carrying out the resolutions a General Committee was formed with Mr. Frederick Barron, as chairman; Mr. B. Orridge, as treasurer; and Messrs. Michael Carteigho, John Mackay, and Henry Matthews, as secretaries. The following gentlemen form the Committee appointed by the meeting; but we may state that it is their intention to exercise fully their power to add to their number:—Professors Redwood, Bentley, and Attfield; Drs. Fox and Spurrell; Messrs. Morson, Betty, Brady, Brough, Hanbury, Pass, Hill, Deane, Abraham, Flux, Bird, Bourdas, Williams, Waugh, Ince, Vizer, Reynolds, Haselden, Bremridgo, Bottle, Howden, Watson, Cox, Constance, Carter, Warner, Bartlett, Gulliver, Lord, Barnes, Wright, Buckle, Shepherd, Pedler, Randall, Tibbs, Squire, Francis, Commans, D'Aubnoy, Savago, Herring, Umney, Groves, Dymond, Stoddart, Earle, Proctor, and Robbins.

Some conversation ensued as to the form which the testimonial should take; but the definite consideration of this point was postponed till the next meeting of the Committee.

The Committee met on Tuesday evening last, Mr. Frederick Barron occupying the chair. Eighty pounds were at once subscribed, and it was decided that the testimonial should be partly commemorative and partly personal.

MEETING OF HOMŒOPATHIC CHEMISTS.

We have been furnished with the following Official Report:—A well attended meeting of Homœopathic Chemists was held in the Boardroom of the London Hospital, Great Ormond-street, on the 6th instant, to consider the expediency of forming a society having for its objects the development of Homœopathic Pharmacy, and the interests of the trade generally. Perfect unanimity prevailed, and the constitution and bye-laws of the Homœopathic Pharmaceutical Society of Great Britain, embodied in a series of resolutions, were adopted. The society are making arrangements for meeting monthly, and its members are very sanguine as to the benefits which will accrue from these meetings.

BIRMINGHAM CHEMISTS' ASSISTANTS' ASSOCIATION.

A general Meeting of the Birmingham Chemists' Assistants' Association was held on the 24th ult. at the Globe Coffee Rooms, in that town, to take some steps in reference to the provisions of the Pharmacy Act.

About forty members were present, and the chair was occupied by Mr. Mucklow (President.) Thirteen new members were elected by ballot, and the following gentlemen were nominated as the committee for the ensuing half-year:—Messrs. W. J. Churchill (president,) Turton, Jones, Harland, Mucklow, Dewson, Bliss, and Reeves. It was resolved to form a *Materia Medica* class, to be conducted by two examined members of the Association, so that the other members might have the opportunity of qualifying themselves to pass the examinations; and Mr. W. J. Churchill and Mr. Dewson were chosen to conduct the class.

ADULTERATION OF FOOD AND DRUGS.

In the Health Section of the Social Science Congress at Birmingham, on the 5th inst., Mr. John Postgate, Professor of Queen's College, Birmingham' read a paper on "The Legislation on Adulteration of Food, Drink, and Drugs." Mr. Postgate stated that ten years ago he had called attention to this subject and that he had prepared a Bill to amend the Adulteration Act, 1860, and extend its provisions to drugs. This Bill (which had been introduced into the House by Mr. Geo. Dixon M.P.) had passed the second reading unopposed, and he hoped he should receive the support of the Public Health Section by the passing of a resolution in favour of the Bill, a resolution which would advance the cause of purity of food, and drink, and drugs. Having reviewed what had already been done, and his own endeavours to arouse public interest both by letters in the public press and lectures in different towns, he contended that the adulteration of food, drink, and drugs ought to be felony, and the knowingly selling adulterated food, and drugs a misdemeanour. The following propositions contain the remedy for adulteration:—1. By making it an offence punishable by fine and imprisonment. 2. By the compulsory appointment of analysts, to whom the inspectors, the public, and traders could refer articles for examination and analysis. 3. By authorising the officers to take steps for the suppression of poisonous and injurious adulteration of food and drink, and the adulteration of drugs. 4. By the use of the present staff of inspectors to receive the articles, and to institute proceedings before the magistrates on receiving reports of detected adulteration. 5. By giving further and summary jurisdiction to the magistrates in all cases of trade frauds. 6. By the appointment of Government Commissioners to assist local authorities in carrying out and enforcing the proposed law against adulteration. 7. By the inspection of manufactories for the detection of the adulteration and punishment of the offenders. 8. By keeping the public informed of the nature and character of the adulteration practised in food, drink, and drugs; by publicly reading the quarterly reports of the public analyst before the corporations and other authorities appointing them. 9. By the seizure of all pernicious and poisonous admixtures and ingredients used in the adulteration of food, drink, or drugs, found on the premises of the adulterators. Mr. Postgate said that as the intention of the adulterator was to deceive and to defraud, the punishment ought to be clear and decided. Fines were of small use in such a matter; imprisonment alone would deter respectable criminals from a practice which led rapidly to ill-gotten wealth.

On the 6th inst. at termination of the last meeting of the Health Section, a resolution was proposed and seconded, that "The Council of the Association be requested to continue their efforts to promote more efficient legislation on the subject of adulteration of food."

UNITED SOCIETY OF CHEMISTS AND DRUGGISTS.

President.—Josiah T. Slugg, Esq., F.R.A.S.

Vice-Presidents:

H. M. Noad, Esq., Ph.D., F.R.S.
Henry Barnaby, Esq.
James Burgoyne, Esq.
Thomas Burbidge, Esq.
Joseph Fairs, Esq.
John Page, Esq.
Edward Snape, Esq.
Edmund Holt, Esq.
Henry Armstrong, Esq.
Frederick Herron, Esq.
John Edisbury, Esq.
Julius Schweitzer, Esq.

Executive Committee:

George Clayton, Regent-st.
Charles G. Nunn, Hampton.
Edward Thomas, Drury-lane.
Henry Turner, Fleet-street.
Thomas Garner, Stoke Newington.
F. J. Stannard, Croydon.
Samuel J. Gunn, Harrow.
Geo. Mellin, Tichborne-st., W.
Adolph Baumgaston, New Oxford-street.
John Padman, Thorney-st., W.C.
Edward G. Gould, Westbourne-place, W.
Peter Lord Pavitt, St. John's Wood.
Joseph Burton, Cambridge-rd.
William Jenkins, Red Lion-st.
Ambrosc Warden, 202, Caledonian-road.
E. C. Coverley, Thayer-street, W.
Cyrus F. Buott, Dalston.
T. P. Ralph, Quebec-st.. W.
Henry Saph, St. John's Wood.

A meeting of members of this Society was held at the offices of the Society on Thursday, the 8th inst., Mr. L. J. Myers presiding, when the following resolutions were unanimously adopted:—

1. "That as the success of the Pharmacy Act of 1868 is attributable to the unwearied exertions of the United Society of Chemists and Druggists, it now becomes the duty of that Society to protect the rights of its members, and to influence the administration of the Act in a liberal

spirit, so as to render it advantageous to the trade."—Moved by Mr. Stevens; seconded by Mr. Cook.

2. "That much as this meeting regrets that the liberal character of the Bill, as agreed to by the United Society, was impaired during its last stage in Parliament, it would urge all Chemists and Druggists and all assistants to the trade to give the Act a fair trial by rendering practical obedience to its requirements; and if they experience any difficulty or injustice in doing so, to seek the aid and protection of the United Society."—Moved by Mr. Canning; seconded by Mr. Ralph.

3. "That the thanks of this meeting be given to the officers and members of Bolton and other Associations for recognising their responsibility in relation to the expenses of the Society, notwithstanding political differences, and thereby furnishing an example to those Associations which are in arrear."—Moved by the Chairman; seconded by Mr. Poths.

4. "That the members of the Society who have not yet paid their membership fees for 1868 be requested to remit them at once to prevent the expenses of the year devolving upon the Secretary as the legally responsible officer of the Society."—Moved by Mr. Stevens; seconded by Mr. Cook.

A very friendly and earnest feeling characterized the proceedings of the meeting. It was attended by a deputation from the Homœopathic Chemists, and a desire was expressed for that respectable and intelligent section of the trade to more actively co-operate with the Society. Much dissatisfaction was expressed with the essentially liberal clauses of the Bill, resulting from years of deliberation, and constituting the basis upon which the consent of the United Society was given, being altered or expunged in the last stage of the Bill so as to preclude any advocacy or protest in the interest of the trade. Much sympathy was felt with those Chemists and Druggists who would be deprived of the right of exemption from jury service, and with the whole body of Assistants whose vested interests were ignored by the retrospective action of the Bill; and it was suggested that a remedial measure might be brought before the new Parliament.

A vote of thanks to the Chairman closed a very interesting meeting.

CYRUS BUOTT, Secretary.

CASES OF POISONING.

BY HYDROCYANIC ACID.

We have to record that Mr. T. W. Ransome, of the firm of Ransome and Latham, surgeons, Darlaston, committed suicide at his residence in Church-street, in that town, on the 22nd ult. It appears that after attending a patient early in the morning of that date, he called at the shop of Mr. Job Butler, chemist, and obtained an ounce bottle of hydrocyanic acid. On his return home, he took a seat in the dining room, where Mrs. Ransome left him to attend to her domestic duties. Shortly afterwards, she and her servant were alarmed by hearing Mr. Ransome groaning, and on her return to the room, she found him evidently in a dying state. Medical aid was instantly procured, but though Mr. S. Partridge, surgeon, was immediately in attendance, his efforts were of no avail, death ensuing in a quarter of an hour. The ounce phial which was found by his side nearly empty, bore a label "hydrocyanic acid." The unfortunate gentleman, who was about 45 years of age, had carried on an extensive practice in Darlaston for about twenty-five years, and had earned the reputation of being a most skilful surgeon. Deceased was highly respected, and great sympathy is expressed for Mrs. Ransome.

BY SUBACETATE OF LEAD.

A coroner's inquiry touching the death of a deaf and dumb man named Thomas Mayer, terminated at Leek, on the 11th ult. It appeared from the evidence of Mr. Charles Heaton, that deceased was an inmate of Leek Union Workhouse, 63 years of age, and suffering from disease of the lungs and liver. Being a mute, the patient made signs to another aged occupant of the same room, on the 31st August, for a cup which stood on the hob of the grate, and, having received the cup, he swallowed its contents. The cup is supposed to have contained five ounces of a lead lotion, prepared by mixing two drachms of the solution of subacetate of lead with a pint of water. The master of the workhouse was not apprised of the fact until two hours and a half afterwards, when he sent for Mr. Heaton, who immediately administered an antidote to convert the lead into a sulphate. The man being in an enfeebled state, two ounces of brandy was administered to him daily, and, notwithstanding the stimulant, he sank. After performing a post mortem examination, Mr. Heaton gave his opinion that deceased died from disease of the lungs, accelerated by the inflammatory state of the stomach, which was not sufficient in itself to cause death. The jury returned a verdict in accordance with this testimony.

BY ARSENICAL OINTMENT USED BY A CANCER-QUACK.

We extract the following article from the *Lancet*, of October 3:—" We are not insensible to the force of the reasons for giving quackery plenty of rope. Scientific medicine can afford only too well to smile at those notions of personal liberty which permit one subject to give, and another to take, advice in vital matters where both parties are, in the nature of the case, incapable of having a right judgment. A singular illustration of the liberty of subjects has just occurred in Scotland. A certain Mrs. Landess, of Paisley, was recovering in March last from an abscess of the breast, consequent, apparently, on weaning her child, when she chanced to meet a man who, from his own account, had been cured of cancer of the ear by one Alexander Paterson. She immediately conceived the wish to see Paterson, and to try his practice. He came, and pronounced the stangs that Mrs. Paterson had felt in her suppurating breast to be the symptoms of cancer, which he proceeded to attack heroically—that is to say, by first applying a blister to the breast, and then an arsenical ointment, which, according to the analysis of Professor Maclagan, was nearly half arsenic and half lard. Very naturally Mrs. Landess began to get worse. She had headache, vomiting and retching, great thirst, and the inflammation got worse and spread from the breast to the arm. She died in ten days. Arsenic was found in the various tissues and organs of the body. Professor Maclagan found no trace of cancer in the breast, and had no hesitation in saying that the patient had died of arsenical poisoning. The only defence set up for the 'panel' was, that he had cured many cancers with this ointment, and that it had been laid on a little thicker than he ordered. The judge, Lord Ardmillan, said there could be no doubt that Mrs. Landess died from arsenic. But he summed up with great consideration to Paterson, observing most unnecessarily to the jury—The Court is not here for the protection of the rights and privileges of medical practitioners; and a man, though not licensed, is not to be punished for culpable homicide unless the jury is satisfied that he acted culpably.' He accepted the evidence of Paterson's cures, and ended a lenient address by the remark that 'a mere mistake did not imply culpability. Fortunately the jury was firm in its perception of the guilt of such quackery as this, and returned a verdict accordingly, accompanied, however, with a recommendation to mercy. The 'panel' was sentenced to four months' imprisonment. We cannot but think that the judge in this case spoke much too lightly of the guilt of the quackery. The medical profession depends for its reputation on its own merits, and does not want the protection or the patronage of judges; but to have such conduct and such crass ignorance as Paterson's associated with such ideas as 'a mere mistake' is very like an undue protection of quackery."

LAW AND POLICE.

SINGULAR CHARGE AGAINST A SURGEON.

At the Birmingham Borough police-court, on the 28th ult., George Williamson, surgeon, of park-lane, Aston, was charged before Mr. Kynnersley (the stipendiary magistrate), with embezzling £9, the property of Alfred John Holiday, nurseryman and seedsman, Bull Ring, Birmingham. Mr. J. W. Cutler appeared for prisoner. Mr. Holiday, in stating the case, said he had known the prisoner for some time, and had employed him as a shopman in a druggist's shop. The prisoner had formerly practised as a surgeon on his own account, but owing to his drunken habits he lost his practice, and was reduced to a state of great distress. He, the prosecutor, had taken a shop at 226, Newtown-row, Aston, and having stocked it with drugs, had engaged the prisoner to carry on the business of a chemist and druggist, at the salary of £1 per week, with the idea that when he (the witness) had received as much money as he had expended he would then give up the shop entirely to the prisoner. This was in October, 1866. Prisoner appeared to lead an amended life, and sent for his wife and family, who had been living apart from him. Matters seemed to be going on steadily for about three months, when prisoner recommenced his drinking habits, and at the time when the accounts were examined there was a balance of upwards of £24 due to witness, which prisoner said he had spent.

The book of receipts and expenditure having been put in, it appeared that £24 14s. 5d. was due to Mr. Holiday.

Mr. Kynnersley: He has never denied receiving the money?

Mr. Holiday: No, sir. He went on drinking, and not only spent the money, but pledged a watch and case of surgical instruments which I lent him.

Mr. Cutler: When the prisoner had the shop he also practised as a surgeon, and the prosecutor claims the profits that were made by the prisoner in his profession as surgeon, as well as the profits of the chemist and druggist's business.

Prisoner: All that I owe him is £16 10s.

Mr. Kynnersley: Unless he denies the receipt, or falsifies the accounts, you cannot charge him criminally.

Mr. Holiday: He has admitted receiving sums of money, which he was too drunk to enter.

Mr. Kynnersley: If you can show that he intended and wished to defraud you, you may establish a criminal case, but if not, your case against the prisoner is simply a matter of account, and the money owing to you must be recovered in the County-court.

The prisoner was discharged.

STEALING DRUGS, ETC.

At the Shire Hall, Nottingham, on the 23rd ult., two young men, named Gay, were charged before the sitting justices with having stolen a quantity of drugs, soap, etc., belonging to Mr. Mathew, surgeon, Selstone. It appeared that two hampers of drugs, etc., had been given into the charge of the Selstone carrier by Messrs. Parr and Atherton, druggists, Long Row, Nottingham, on the 16th ult., for conveyance to Selstone; that the carrier had left the hampers in the cart on the road side, and that during his absence one of the hampers had been broken open and a portion of the contents stolen. The articles were traced to the prisoners, who pleaded guilty, and were sentenced each to one month's imprisonment.

UNJUST WEIGHTS.

At the West Bromwich police-court, on the 19th ult., Richard Gold, druggist, Harborne, was fined 20s. and costs, for having in his possession eight unjust weights.

ACTION TO RECOVER THE VALUE OF LAVENDER FLOWERS.

An action was brought in the Banbury County-court on the 15th ult., by Messrs. Harrison Brothers, late chemists of Banbury, against the Messrs. Povey, of Warwick, to recover the value of a quantity of lavender flowers grown on a quarter of an acre of land. Mr. Pellatt represented the plaintiffs, and Mr. Kilby appeared for defendants. The defence was, that the bulk of the goods supplied by the plaintiffs was not equal to the sample. It appeared from the evidence that the sample consisted simply of flowers without stalks, whereas the bulk of the flowers sent in had the stalks adhering. His Honour (J B. Parry, Esq.) considered that the goods sent in were not equal to the sample. Mr. Pellatt submitted that it was customary to cut the stalks with the flowers, and that the defendants had kept the perishable goods for ten days, a fact that might account for their deterioration. His Honour, however, thought that as there had been no delivery of the articles as ordered, there had been no acceptance. His opinion was that defendants did not have the goods they bargained for. Judgment for defendant.

CHEMICAL MANUFACTURE.

At the Bristol police-court, on the 3rd inst., Mr. John Daniel Prichard, oxalic acid manufacturer, of Avon-street, in that city, was summoned before the magistrates to answer to an information laid by the Local Board of Health, the effect of which was, that his manufacture was injurious to the health of the inhabitants of the neighbourhood. The defence was, that Mr. Prichard had adopted the best means of suppressing evil effects, and that he was about to remove his business from Bristol to Swansea, where premises were being erected. He was fined forty shillings, the question of appeal being left open.

UNQUALIFIED MEDICAL PRACTITIONERS.

At the Hales Owen Petty Sessions on the 6th inst., Mr. Thomas Holland, an unqualified medical practitioner, residing at Oldbury, was charged before the sitting magistrates with holding an appointment of surgeon to a friendly society held at Langley, Oldbury, he not being a duly qualified person. The charge was preferred under the 30th section of the Medical Act.

Charles Tomlinson, secretary to the society in question, stated that until lately the sick notes for the club had been given by the defendant, but within the last month or two they had been given by Mr. Dempsey, whose name was printed at the bottom of the notes. Though bearing this signature, the notes were filled up in Mr. Holland's handwriting. Mr. Dempsey had never been elected surgeon to the society. A member of the club, named Nicholls, proved that Mr. Holland had attended him when ill, and had supplied his medicine, and that the club paid Mr. Holland for attending him. Mr. Philips, surgeon, of Rowley, proved that the word "surgery" was on defendant's door; and the *Medical Register*, of 1868, was put in to prove that the defendant was unqualified.

Mr. Dempsey, who was called for the defence, stated that he was surgeon to the club, and that the defendant acted as his assistant, at £100 per annum. In cross examination, Mr. Dempsey, stated that he had only engaged Mr. Holland a month ago, and had never paid him any salary. Mr. Holland attended all patients, received the fees, and kept the books. His (Mr. Dempsey's) surgery was about 100 yards from Mr. Holland's, and none of the patients seen by Mr. Holland went to his (Mr. Dempsey's) surgery.

A second case was also proved against the defendant, who was charged with acting as a surgeon, he not being qualified.

The magistrates considering that defendant had been previously convicted upon similar charges, inflicted a fine of £15 and costs in the last, and £5 and costs in the first case.

Peter Norman Webster was also charged with holding an appointment of surgeon to a similar society at Oldbury, he not being a qualified medical practitioner. The charge being fully proved, he was fined £5 and costs, as this was the first case against him.

BANKRUPTCY.

JOHN REEVE, BIRMINGHAM, WHOLESALE DRUGGIST.

The first meeting was held on the 23rd ult. before Mr. Registrar Hill. Mr. Griffin and Mr. Rowland appeared for creditors, and Mr. Fetter for bankrupt. On the nomination of Mr. Griffin, Mr. James Aikin Laing, 2, Dunston Court, Mincing-lane, London, drysalter, was appointed assignee.

WILLIAM COCKRELL ORFORD, BIRMINGHAM, SURGEON.

An adjourned first meeting was held on the 23rd ult. before Mr, Registrar Hill. Mr. King, who appeared for creditors, stated that a resolution was filed to take the proceedings out of court, and the matter was adjourned to the 23rd inst. for completion of the case.

J. E. WOODS, CROSCOMBE, CHEMICAL MANUFACTURER.

An adjourned sitting before Mr. Commissioner Hill was held at Bristol on the 5th inst. Mr. E. E. Salmon, who appeared for the assignees, said the case had been taken out of court by a deed of inspectorship which had been registered, and asked for an order annulling the bankruptcy. An order was accordingly made.

C. E. E. WELCHMAN, LICHFIELD, SURGEON.

The first meeting, held before Mr. Registrar Hill, at Birmingham, on the 30th ult., was attended by Mr. Harris, on whose nomination Mr. John Worthington, of Lichfield, was appointed assignee.

ACCIDENT.

A CHEMIST BITTEN BY A VIPER.

According to the *Daily News* an accident of a very extraordinary character has just occurred at Ebbw Vale, South Wales. Some time ago Mr. Davis, a chemist and druggist, carrying on business in that town, became possessed of a viper, and forming the idea that he would be able to tame it, he placed it in a box, kept it as a pet, and became much attached to it. He was in the habit of feeding it and talking to it, and apprehended no danger from it. On Friday the 18th ult. the creature became very much excited by some cause, and showed a great deal of irritation. Mr. Davis was under the belief that he would be able to soothe it, and with a feeling, as the result showed, of overconfidence, he put his hand into the box, and proceeded to stroke the reptile down the back. Instead of becoming quiet as he had anticipated, the snake became more incensed—erected its neck, and darting forward bit him on the finger. Mr. Davis at once closed the box, and knowing the dangerous character of the viper's venom, he took the precaution to make an incision into the part of the finger where the bite had taken effect, and to suck the wound, in the hope thereby of extracting the poison before the absorbent vessels had had time to take it up. Notwithstanding this precaution, the poisonous effects of the bite soon began to show themselves. First the hand, and then the arm began to grow irritable and to swell; then the whole system became affected, and in the course of a very short time the unfortunate gentleman was in a state of great agony and suffering. Medical assistance was invoked, and the surgeon of the works attended and applied the remedies which he thought most likely to counteract the effects of the virulent poison. For a time Mr. Davis was so ill that it was feared that his injuries must terminate fatally. He has, however, since rallied under the treatment to which he has been subjected by his medical adviser, and it is hoped that all danger is now over. In all probability the injured gentleman owed his only chance of recovery to the prompt measures he adopted in order to abstract the poisonous matter. Had he permitted the whole of it to become absorbed into his system, it is believed that death must have resulted.

GOSSIP.

Dr. Herapath, F.R.S., the analytical chemist, died at Bristol last Monday night. He was 46 years of age.

Dr. Johnston was appointed physician to the Queen's Hospital, Birmingham, on the 15th ult.

At the meeting of the Social Science Congress on the 6th inst. it was considered advisable to establish in Birmingham a branch of the Ladies Sanitary Association of London, and a committee was appointed to carry out the suggestion.

On the 28th ult. the resident officers and students of the General Hospital, Birmingham, presented Dr. Wyllie with a gold watch, as a token of respect and affection, on his resigning the appointment of house physician to the Hospital, and his departure from Birmingham.

Several valuable lots of property situate in Malvern was offered for sale on the 17th ult. under the will of the late Mr. William Perrins, chemist, of Worcester. The property was divided into eleven lots, and comprised business premises, villas freehold, building land, dwelling houses, ground rents, reversions &c. There were only two lots absolutely sold, the remainder being bought in, an impression having gone abroad that the sale was only to test public opinion as to value. Lot 1, bought in at £8,000; lot 2, at £4,200; lot 3, at £4,000; lot 4, at £500; lot 5, at £300; lot 6, sold to Mr. J. W. Lea for £750; lot 7, sold to Mr. John Jones William (of Derby), for £2,175; lot 8, bought in at £500; lot 9, at £500; lot 10, at £500; lot 11, at £500.

GAZETTE.

PARTNERSHIPS DISSOLVED.

Armstrong and **Workman**, Duke-street, St. James's, surgeons.
Barnett, **Carr**, and **Miller**, Blackheath, surgeons.
Bottomley and **Foster**, Huddersfield, surgeons.
Davison and **Robertson**, Alnwick, chemists.
Day and **Gibson**, Kingston upon-Hull, surgeons.
Dickenson and **Prytherch**, Brymbo, Denbighshire, surgeons.
Hunter, **Cooper**, and **Hunter**, Low Walker, near Newcastle-on-Tyne, manufacturing chemists; so far as regards **William Cooper**.
Luce and **Cardell**, Wincanton, surgeons.
Sinclair and **Bentley**, Halstead, Essex, surgeons.
Sullivan, **Sivewright**, & Co., Widnes, alkali manufacturers.
Tanner and **Aldersey**, Cliftonville, Sussex, surgeons.
Turnbull and **Ross**, Newcastle-upon-Tyne. mustard manufacturers.
Usher, J. W., R., and E., Ilkley, Yorkshire, chemists; so far as regards **John Wilkin Usher**.

BANKRUPTCY ANNULLED.

Collingwood, **William**, Maidstone, chemist.

BANKRUPTS.

Bowker, **William Timm**, and **Grimshaw**, **James**, Droylesden, Lancaster, chemical manufacturers
Hunt, **Richard**, Walworth, doctor of medicine.
Kerr, **Thomas**, Edgware-road, chemist.
Mark, **George** George-street, Plymouth, chemist.
Power, **Maria**, Harrogate, druggist.
Reeves, **Henry**, Beckley, chemist.
Royston, **William Lemin**, Buckley, chemist.

DECLARATION OF DIVIDEND.

C. W. **Blake**, Crewkerne, veterinary surgeon, 1⅜d.

Trade Memoranda.

PATENT medicines show no signs of decay. They are abused, derided, denounced, and despised, and yet they flourish with more vigour than ever. The superfine writers of the almighty guinea school would have us believe that the march of civilization was going to push patent medicines altogether off the road. We should be sorry for civilization if we had to fasten our faith to this as evidence of its advancement. The firm of Newbery and Sons, of St. Paul's Churchyard, could tell us the history of many a popular medicine, for they have been identified with the business for the last century and a-quarter. The late grandfather of the present Messrs. Newbery, Mr. Francis Newbery, established the business on the spot which they have ever since occupied, and won an early and a lasting reputation for his name by the successful introduction of the well-known James Powder. His son, Mr. John Newbury, afterwards conducted the business and was in turn succeeded by the present members of the firm, Messrs. Arthur Le Blanc and Lionel Newbery. These gentlemen have infused such energy into the business, that it has rapidly overgrown their premises and they have now removed to a much larger and very commodious building next door to the scene of their old triumph. We take this opportunity of wishing them continued prosperity.

During a recent visit to Glasgow, we were very politely shown the process of manufacturing essence of coffee by Mr. Andrew Yuille, practical chemist, of that city. The care taken in this establishment to produce an excellent essence is worthy of remark, the whole of the vessels and pipes through which it has to pass being perfectly air-tight and silver lined, in order to prevent any contamination from verdigris. After completely exhausting the ground coffee, the essence is concentrated by steam heat, being boiled *in vacuo* at a temperature of 108 to 110 degrees. The aroma is therefore retained, and the burnt or smoky taste, which is sometimes noticed in similar preparations, is avoided. We have tasted coffee made from Mr. Yuille's essence and found it "all our fancy painted," after examining his very elaborate apparatus.

The quintessence of savory spice, made by Mr. Jaap, of the same city, is a very concentrated flavouring essence, especially adapted for soups, &c., made from extract of meat. It adds a good relish to these, and to other soups, and gravies also, and is no doubt saleable along with the extract.

An American dentist has apparently found the happy medium between tooth poowder and tooth paste. His notion is a small flat cake, divided into a number of little square tablets, one of which is to be broken off and placed in the mouth and then brushed on to the teeth. One advantage suggested by this plan is, that the tooth-powder box may by handed round like a snuff-box. Messrs. Jamieson, of Glasgow are introducing these.

The *employés* of Messrs. J. Schweppe and Co., the celebrated soda-water manufacturers, were treated, through the kindness and liberality of their employers, to a visit to the Leeds Exhibition, on the 26th ult.

The *employés* connected with the Chemical works Diglis, Worcester, enjoyed their annual pic-nic, on the 15th ult., on the Herefordshire Beacon, the cost of trip and entertainment being defrayed by the principal, Mr. William Webb.

We have before us a Chemist's Homœopathic Order Sheet, issued by Messrs. Ashton and Parsons, of Wormwood-street. It is evidently a very useful guide to those who deal in these remedies, showing the entire necessary stock and thus preventing the annoyance of finding that the article most urgently needed was omitted from the order, which has perhaps sometimes happened to the most careful.

NOTES AND QUERIES

Pharmacy Act, 1868.—We must beg our correspondents to study the Act for themselves as we have no special power of interpretation. *A Subscriber.*—Schedule E is so worded that there can be no doubt that an assistant claiming to be registered must have been engaged in dispensing for three years *immediately* preceding the passing of the Act. As we understand section 17, a medicine containing a poison, prepared according to prescription, must be properly labelled, and entered in a book, but the person to whom it is delivered need not sign the book. The tinctures and other preparations of the Brit. Pharm. must be compounded according to the formularies of that work. *J. Jones* (Llanrwst).—After having been registered under the Act you will be eligible to be elected a Member of the Pharmaceutical Society, owing to the fact that you were in business on your own account at the time of the passing of the Act. *J. Smith* (Kilmarnock).—The Act does not extend to or interfere with the business of any legally qualified apothecary. *G. M.*—There appear to be insuperable objections to local examinations. The botanical gardens of London. *Charles Stewart.*—Registration in the United Society does not exempt you from registration under the Act. *A. E. J.*—We were not aware that you were under age at the passing of the Act. You will have to pass the minor and major examinations to become a "pharmaceutical chemist." *Subscriber* (Bath).—Your interpretation of the clause appears to us to be perfectly correct.

G. G. H. (Brighton).—We could not publish your communication, with the additional matter, without a painful consciousness that we had rashly marred the amenities of journalism. We shall be happy to publish a scientific communication addressed to ourselves.

Jacques (Sedgley).—We believe that the fees are demanded for registration, and if candidates do not pass the examinations they are returned. You should apply to the Secretary.

W. W.—We should say that the label is not liable to the stamp duty, but the decisions of the authorities at Somerset House are so inconsistent that we cannot pronounce a decided opinion.

Lime Juice and Glycerine.—*A Subscriber.* Equal parts of almond oil and solution of lime scented according to taste.

CORRESPONDENCE

THE NEW ORDER OF THINGS.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

Sir,—The great object for which we have been striving for several years is attained, and, through the instrumentality of outsiders, the Pharmaceutical Council has become the governing body of the entire trade. So far so good; but judging from the tone of the *Pharmaceutical Journal* since the passing of the Act, the representation of other branches seems to be lost sight of in the glorification of the Council. After the assistance, and I may say, the propulsion received from old opponents, (without whom the Council could never have gained its present proud distinction), some recognition of the services rendered by outsiders ought to have tempered the Council's self-sufficiency For seven years past your Journal has advocated our cause, and we still cling to you as our hope against maladministration, and against collusion between our governors and medical authorities. We look to you to stand up for the commercial interests, and to defend the chemist and druggist when unfairly attacked. Our endeavour has been to create a representative head; and because we regarded the Pharmaceutical Council as the representative of only those pharmacists whose income is derived from dispensing and the high-class trade, we helped to establish an association which would take into consideration the necessities of the country trader, of the poor retailer, and of even the much though wrongly condemned prescribing chemist. Since the establishment of the British Pharmaceutical Conference, the councillor has been abroad, and must now admit the fact, however much he may deplore it, that the generality of chemists and druggists cannot exist by dispensing alone; and although there are some leading pharmaceutists who will not even now look beyond the mile radius of Regent Circus, or understand that different localities require different orders of medicine dispensers, there are several gentlemen on the Council, who will take a common sense view of things as they exist; and whilst hoping that the practice of medicine may be so arranged in future that every class shall fulfil the duties for which it is fitted, will regulate trade matters for the benefit of the mass, and not those only who are swimming successfully on the full tide of the favour of fashionable physicians. Under the old order of things, the Council was the admitted representative of education and pure Pharmacy, and cared exclusively for the interests of the members of its own society (as was instanced in the Juries' Bill), but now it is no longer justified in bestowing its parental favouritism on one section of the trade. With the sanction of the entire trade, it has ceased to be simply the representative body of a school or department, and has become the governing body of the chemists and druggists, of those who prescribe in their established way over their counters, and even of those who retail snuff, mops, and fiddle strings, together with medicines. It is no doubt right enough to point to higher things, and in future Pharmacy will be placed on a more respectable footing. But we have to do with present interests of chemists and druggists, and these interests are too often antagonistic to those of red bottled apothecaries and chemist-surgeons. Instead of sweeping off with condemnatory sentences the practice of counter-prescribing, and declaring the chemist to be violating the trust reposed in him; instead of toadying to the medical authorities, and palliating open surgeries, the Council should make a stand in defence of their brethren, and endeavour to put aside the custom of surgeons to supply their own medicines, of keeping shops and of entering into contracts with leading chemists, receiving commissions, and the chief evils which compel the majority of druggists to mix their trade and prescribe. It is the duty of the Council to advance the pharmaceutical spirit and educate future generations, but it is also its mission to defend the establishments of the present day which are unable to become orthodox, on account of the surgeon's encroachments on their legitimate trade. I do not hesitate to affirm, that there are none of us who would not gladly confine ourselves to dispensing, if the apothecaries would supply us with work, and faithfully refuse to infringe upon our prerogative. Having so far gained our object in closing the trade to all but educated and respectable members of society, let us endeavour to make it more remunerative, by entering upon a crusade against the evil which at present exists. Let the Council and our journals at once speak out with no uncertain tone. Let there be no surrendering to the medical organs, but a bold declaration of the necessity for their readers to set the example of pure practice, and at once place the ordering of medicines and the supplying of the same in their proper relations. With a Council so determined we should at once understand that we had a governing body properly performing its functions, and deserving of our help and support, producing a harmony, and pursuing the surest means to Pharmacy to its highest point. It becomes us then at starting to see, that in this king which we desired to reign over us we have neither a Log nor a Stork; but so sure as we neglect the proper constitution of the Council, we shall find that it would have been better to have retained our original freedom than to have desired an authority only destined to devour us, and give the dispensing chemists every advantage over their brethren. The dispensing trade is trifling throughout the kingdom, compared to other descriptions of business; and yet, as at present constituted, the Council represents only the dispensing portion. Then it behoves us at starting to see that the various sections of the trade are properly represented at the board of management. And I appeal to you, sir, much as your desire may be to lead your journal into scientific channels, to remember that you always have been the organ of the trade, and are looked up to as the conservator of its rights.—I am, &c.,

October 6, 1868. JOHN WADE.

[We are sorry we cannot share our friend Mr. Wade's opinions respecting the relations existing between pharmaceutists, chemists and druggists, and medical men, and we are bound to consider his present communication singularly ill-timed.—ED. *C. & D.*]

UNITED SOCIETY OF CHEMISTS AND DRUGGISTS.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—Having received an old circular from Mr. Buott, asking for subscription in aid of the United Society, will you kindly inform me if that society still exists; who are the President and Executive body, and what has become of the Benevolent Fund? An answer through the medium of your valuable Journal would greatly oblige.—Yours, &c.,

A SUBSCRIBER TO THE UNITED SOCIETY.

Caledonian-road, Oct. 10.

TENDERS.

The guardians of the Leicester Union have accepted the tender of Mr. Cox for the supply of drugs.

The Wolverhampton guardians have accepted the tender of Mr. Watson for drysaltery.

The Birmingham guardians received seven tenders for the supply of drysalteries for the quarter ending December. The competitors were, Mr. Francis Williams, Broad-street; Mr. Joseph Key Adams, Wittall-street; Messrs. Canning and Keats, Great Hampton-street; Messrs. R. and F. J. Adams, Suffolk-street; Messrs. Joseph Gilman and Sons, Lancaster-street; Messrs. J. Coulson and Jacombs, Ludgate-Hill; and Messrs. Banks and Richards, Bull Ring. At a meeting of the Store and Reference Committee held on the 29th ult. the tenders of Mr. Francis Williams, Mr. J. K. Adams, and Messrs. Canning and Keats were accepted. The tenders accepted are given below:—

	F. WILLIAMS.	J. K. ADAMS.	CANNING AND KEATS.
Oak varnish, per gallon	0 7 6	0 7 6	0 7 0
Boiled oil ,,	0 3 1	0 3 0	0 2 10
Lamp oil ,,	0 3 4	0 3 2	0 3 2
Sloe oil ,,	0 3 1	0 3 0	0 2 9
Linseed oil ,,	0 2 11	0 2 10	0 2 8
Olive oil ,,	0 5 11	0 6 0	0 0 0
Turpentine ,,	0 2 3	0 2 6	0 2 6
Best white lead, per cwt.	1 8 0	1 7 0	1 7 0
Best red lead ,,	1 5 0	1 4 0	1 4 0
Yellow Ochre ,,	0 7 0	0 16 0	0 0 0
Venetian red ,,	0 8 0	0 16 3	0 7 0
Brown Umber, per lb.	0 0 2	0 0 3	0 0 1
Chrome, yellow ,,	0 0 10	0 1 0	0 0 8
Lime, blue, per cwt.	1 14 0	1 8 0	1 4 0
Roll Brimstone ,,	0 11 0	0 11 0	0 11 0
Patent Driers ,,	1 0 0	0 17 0	1 0 0
Glue ,,	2 2 0	2 4 0	2 0 0
Pitch ,,	0 10 6	0 11 0	0 9 0
Putty ,,	0 0 6	0 8 0	0 8 0
Alum ,,	0 9 0	0 8 0	0 0 0
Glass Paper, per ream	0 9 0	0 12 6	0 12 6
Black Lead, pure lump, in casks, per cwt.	1 0 0	1 2 6	1 4 0
Soft Soap (Scotch) in firkins, per firkin	0 12 6	0 12 0	0 12 0
Whiting, per ton	1 10 0	1 18 0	1 8 0
Bath Bricks, per 100	0 6 6	0 6 6	0 0 0
Black Japan, per gallon	0 10 6	0 8 0	0 4 0
Russian Tallow, per cwt.	2 10 0	2 8 0	2 8 0

Varia.

WATER ANALYSIS.

ACCORDING to the *British Medical Journal*, the ammonia-method of water-analysis devised by Wanklyn, Chapman, and Smith, is attracting attention abroad. In Holland, it is being taken up by the Faculty of Medicine; and Mulder, the well-known Dutch chemist, whose researches on the protein compounds are chemical classics, has been commissioned to report upon it for the Government. In different parts of Germany it is highly appreciated, and is coming into use.

A NOVEL STYLE OF BATH.

The Germans, who are a metaphysically ingenious people, have invented air-baths. Airing, instead of watering, places have been established on the top of some of the Rhine mountains, and provided with doctors, hotels, cottages, and all other necessaries for a summer sojourn.

OPEN CANCER.

We learn that the exquisite pain which belongs to open cancer is found to be best relieved by the stramonium ointment. The following is the formula: Half a pound of fresh stramonium leaves and two pounds of lard. Mix the bruised leaves with the lard, and expose to a mild heat until the leaves become friable, and strain through lint. The ointment thus prepared is spread upon lint, and the dressing changed three times a day.

TO TEST THE PURITY OF WATER.

A glass tube of about a yard in length, closed at the lower end by a cork, upon which rests a white dish of porcelain, is recommended for determining the purity of water, as the slightest colour is seen against the white ground, and the different shades indicate different ingredients. A green tinge is produced by minute algæ; a white opacity often by fungoid growths; iron salts by a peculiar ochry colour.

TRADE REPORT.

The near approach of the general election will be sure to unsettle the business of the country for a time. Among the wholesale and export houses, however, of the drug trade, business seems to be now very steady. In chemicals during the past month, the chief features of the market have been a somewhat higher price for SULPHATE OF COPPER and SALTPETRE, the latter showing signs of being still dearer, and a very firm tone for QUININE. The terrible earthquakes which have lately occurred in South America, have occasioned a vast devastation of BARK. We are informed that in the manufacture of QUININE, NEW GRENADA BARK is chiefly used; and therefore this deplorable calamity will have but little or no effect upon the price of QUININE. CITRIC ACID is quiet at 2s. 7d. to 2s. 7½d. TARTARIC presented a firmer appearance, makers holding out for 1s. 1¼d. to 1s. 1½d., and no second hand parcels to be bought under 1s. 1d. OXALIC dull at 8d. Very little business done in CREAM OF TARTAR, quotation 83s. to 83s. 6d. There has been an average demand for BLEACHING POWDER at 10s. 9d. per cwt.

DRUGS.

In drugs the prices obtained have been generally equal to the previous quotations. BARK of extra fine quality realised proportionate terms. GUM ARABIC slow of sale, also OPIUM. GAMBOGE sold a little under previous private sales. ALOES, CASTOR OIL, RHUBARB steady. CARDAMOMS realised advanced prices. CUBEBS and GUINEA GRAINS declined. CHAMOMILE FLOWERS, good quality, have fetched 85s. The prices of SCAMMONY have varied from 4s. 3d. to 28s. Two barrels of good JAMAICA HONEY sold at 42s.

OILS.

We have been favoured by a large Foreign firm with some information respecting French and Italian productions. The supply of Oil of Bergamot seems a little better than it has been, as the prices at Messina are slightly lower, and at the same time a brisk demand is reported. Lemon is reported somewhat higher. The following prices are quoted for New Olive Oil for delivery, 64s. 10d., 66s., 68s. Oil of Lavender is reported cheaper. The reports of the Otto of Roses of the past season are also very favourable, both as regards quantity and quality. In Oils, Linseed has been offered freely at £39 10s. to £39 15s. on the spot, and Hull is obtainable at £20 15s. Rape has been in more request and is firmer, business having been done at £31 to £31 10s. for English brown on the spot, the latter being the present price, £32 has also been paid for fine for November-December deliveries, and for the same make £32 10s. has been refused for the first four months of next year. Refined is £33 10s., and Foreign £34 to £35. Although the transactions in these have been unimportant, the market is firm at £69 Gallipoli, £68 Gioja, £66 to £67 Malaga, down to £61 10s. to £62 for Mogador. The market for Cocoanut has been quiet, with sellers of Ceylon at £50 10s. to £51, and of good merchantable Cochin at £52. Of 374 casks of the latter offered by auction, a small part fine in hogsheads sold at £52 15s. to £53. The improved demand alluded to in our last continues, and higher prices have again been paid, with sales of about 400 casks by auction, viz, 340 casks of Wydah fine at £41 10s. to £42, ordinary to good £39 to £41, 48 casks fine Loando at £42, and 20 casks Congo at £43 to £43 5s. Of 38 tuns Colonial Sperm 33 tuns sold by auction at the advanced rates of £98 to £99 10s., 26 tuns bright bought in, brown to pale at £87 to £90. 1 tun winter bagged sold previous to the auction. 2 casks bagged Sperm withdrawn. 13 tuns Southern Whale sold, double compass £37 to £37 5s., rather strong £36 5s., single compass £38 5s. to £38 10s., single compass and nick £36. 15 tuns Shark bought in at £86, and 30 tons Penguin single compass cloudy and thick at £32, 23 tuns pale Seal bought in at £36, 12 tons of straw sold at £32 5s. to £33, fine at £33 10s., 5 tuns dark yellow £31 10s., 8 tuns brown £31 to £32 5s., and 4 casks at £32 10s., 12 tuns Cod bought in at £37 10s., 14 drums mixed Fish sold at £29.

Rosin. — 280 barrels strained American have been sold at 6s.

Turpentine.—Business has been done in American Spirits for arrival near at hand at 25s. 6d., and on the spot at 26s. to 26s. 6d.

Petroleum has been in only limited request with sellers of SW American refined on the spot at 1s. 5½d., the market closing with a rather firmer appearance at 1s. 5½d. to 1s. 6d. for October to December deliveries, 1s. 5¼d. was at one period accepted, and there are buyers now at 1s. 5½d. Several hundred barrels are reported sold here, to be delivered in Liverpool at 1s. 7½d., 400 cases offered by auction were withdrawn. Naphtha is lower, 400 barrels on the spot were sold some days since at 1s. 2d. Of 280 barrels offered to-day, only 9 barrels sold at 1s. 1d. 50 barrels Lubricating Oil were bought in at £18 to £20. Our stock of refined Petroleum is 26,115 barrels, and the deliveries last week were 2,110 barrels against 63,600 and 2,150 respectively same week last year.

The total exports of Petroleum from the United States, from Jan. 1st to Sept. 29th, 1868, has been over seventy-five millions of gallons.

The following return for that period will show the increase of the business in Petroleum:

1865	15,512,240
1866	44,853,345
1867	46,084,245
1868	75,736,454

The market for Dye Woods has been steady. Jamaica Logwood especially being in demand. 60 tons sold in public sale at £4 15s. to £5. An advance of 7s. 6d. in Redwood is noted. Cochineal is a little lower. We learn that the Indigo crops have been generally good.

Monthly Statement

Of the Stocks, Landings, and Deliveries of the following Goods at the Port of London, from Jan. 1 to Sept. 30, 1868 and 1867.

		Stock Sept. 30.		Landings.		Deliveries	
		1868.	1867.	1868.	1867.	1868.	1867.
Aloes	cases	3223	3537	2627	3651	2624	3521
	kegs	78	142	—	68	34	108
	gourds	1513	2446	975	2716	1185	1272
Aniseed, Star	chests	557	403	451	136	228	310
Arrowroot	casks	15084	13646	9609	10789	7261	6597
	boxes and tins	20342	20522	11856	12839	10622	16656
Balsam	casks, &c.	597	312	984	608	636	665
Bark, Medicinal,	casks and cases	294	387	156	324	167	214
	serons, &c.	6863	8263	13712	7851	15614	12915
Bark, Tanners.............	tons	101	98	633	320	607	405
Borax.................	packages	240	237	162	638	13	510
Beeswax	bales and serons	242	201	432	214	437	90
	casks and cases	776	1519	1204	3750	1933	3729
	cakes	767	2162	2717	2968	3527	2356
Brimstone.................	tons	—	315	—	—	—	—
Camphor	packages	1736	2920	2740	3204	2809	2491
Cardamoms	chests	226	226	452	318	316	355
Cochineal—							
Honduras	serons	2910	3274	2553	6494	3058	3945
Mexican	,,	618	688	1397	874	1479	378
Teneriffe	,,	3800	2133	11747	11068	13042	12197
Coculus Indicus	bags, &c.	1357	1121	935	781	568	464
Colombo root	packages	1801	2450	89	1639	620	811
Cream of Tartar..........	casks	140	234	195	362	293	619
Cubebs	bags	1763	1307	740	272	159	709
Dragonsblood	chests	118	104	132	81	111	87
Galls, E. I.	casks and cases	2710	2778	6482	6226	5730	5899
Mediterranean	sacks	15	61	31	51	86	64
Gum—							
Ammoniac	packages	193	226	39	36	33	34
Animi and Copal ..	,,	1472	1520	3585	2082	3572	4131
Arabic, Barbary	,,	18	55	320	260	462	522
Turkey	,,	82	167	56	274	58	395
East India..........	,,	2157	1696	5264	3684	4133	3527
Assafœtida	,,	82	53	207	4	220	154
Benjamin	,,	1042	813	1153	1193	987	1198
Dammar	,,	964	1323	375	744	531	382
Galbanum	,,	1	—	6	3	11	2
Gamboge	,,	130	73	345	146	288	153
Guaiacum	,,	122	57	141	125	103	127
Kino	,,	235	90	279	66	142	13
Kowrie	tons	1209	1472	1431	1918	1524	1712
Mastic	packages	179	235	2	164	56	115
Myrrh, E. I.	,,	42	36	209	46	184	71
Olibanum	,,	1858	1707	3548	4614	2890	4986
Sandarac	,,	176	197	640	781	603	727
Senegal	tons	82	53	57	42	45	26
Tragacanth	packages	18	16	16	4	36	4
Ipecacuanha	casks and bags	149	96	336	270	314	310
Jalap	bales	312	293	417	222	355	186
Lac-Dye..................	chests	3540	3754	4155	2936	4200	4239
Nux Vomica..........	packages	1341	1004	3914	2188	2021	2034
Oil—							
Castor	casks	110	83	92	17	65	37
	cases	284	247	1270	1256	1413	1666
	duppers and tins	12373	5077	46963	23351	39218	25090
Palm	tons	874	450	5386	4332	5191	5113
Cocoanut	,,	2996	4623	7633	6293	7868	8085
Olive	casks, &c.	670	1866	3009	4482	4014	4425
Aniseed..................	cans	227	865	1037	596	1199	1004
Cassia	,,	1703	1480	1126	556	908	1047
Opium	chests, &c.	163	185	—	—	no	retrn
Rhubarb	chests..	1411	759	2494	1198	1690	1620
Safflower—							
Bengal	bales	915	1220	1708	2283	2473	3272
Bombay................	,,	261	118	257	2	92	
Saffron	packages	10	10	2	—	1	—
Sarsaparilla	bales	262	411	1115	1435	1189	1972
Senna..................	bales, &c.	2419	2521	2534	2882	2357	2168
Shellac	chests, &c.	9521	12371	11108	9907	13713	13283
Sticklac............	,,	2274	3342	943	951	1478	2096
Terra Japonica—							
Gambier	tons	3142	2028	8852	6211	7191	5559
Cutch..................	,,	512	840	1729	1335	1641	1218
Turmeric	,,	328	539	347	904	813	829
Vermilion..........	chests, &c.	70	92	60	153	71	156

Monthly Price Current.

[The prices quoted in the following list are those actually obtained in Mincing-lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.]

CHEMICALS.

	1868. June.					1867. June.				
ACIDS—	s.	d.	to	s.	d.	s.	d.	to	s.	d.
Acetic ....per lb.	0	4	..	0	0	0	4	..	0	0
Arsenious (*see* Arsenic)										
Citric ....per lb.	2	7	..	0	0	1	10	..	2	0
Nitric .... ,,	0	5	..	0	5½	0	5	..	0	5½
Oxalic .... ,,	0	8	..	0	0	0	9	..	0	9½
Sulphuric ...... ,,	0	0¾	..	0	1	0	0¾	..	0	1
Tartaric crystal .. ,,	1	1½	..	1	2	1	1½	..	1	2
powdered ,,	1	2½	..	0	0	1	2½	..	1	3
Antimony ore......per ton	280	0	..	300	0	220	0	..	0	0
crude ..per cwt	23	0	..	24	0	23	0	..	24	0
regulus.. ,,	48	0	..	50	0	34	0	..	0	0
star .... ,,	48	0	..	0	0	45	0	..	0	0
Arsenic, lump...... ,,	16	0	..	16	6	16	0	..	16	6
powder.... ,,	7	6	..	8	0	7	6	..	7	9
Ashes (*see* Salts)............										
Brimstone, rough ..per ton	132	6	..	132	6	132	6	..	135	0
roll ....per cwt	10	3	..	10	6	10	3	..	11	0
flour.... ,,	14	0	..	14	6	14	0	..	14	6
Iodine, dry ....per oz.	0	9¾	..	0	10	0	9½	..	0	9½
Ivory Black, dry..per cwt.	0	0	..	0	0	0	0	..	0	0
Magnesia, calcined..per lb.	1	6	..	1	8	1	6	..	1	8
Mercury...... .. per bottle	137	0	..	0	0	137	0	..	0	0
Minium, red ......per cwt.	21	0	..	23	6	21	6	..	22	0
orange .... ,,	32	6	..	33	0	33	6	..	0	0
Precipitate, red ....per lb.	2	6	..	0	0	2	6	..	0	0
white .. ,,	2	5	..	0	0	2	5	..	0	0
Prussian Blue ...... ,,	1	0	..	1	10	1	0	..	1	10
SALTS—										
Alum ....per ton	150	0	..	155	0	150	0	..	155	0
powder .... ,,	170	0	..	175	0	170	0	..	175	0
Ammonia:										
Carbonate ......per lb.	0	5	..	0	5	0	5	..	0	5½
Hydrochlorate, crude, white........ per ton	420	0	..	500	0	400	0	..	500	0
British (*see* Sal Ammoniac)										
Muriate (*see* Hydrochlorate)										
Sulphate ......per ton	320	0	..	336	0	270	0	..	280	0
Argol, Cape ......per cwt	65	0	..	75	0	67	6	..	95	0
France .... ,,	45	0	..	60	0	48	0	..	70	0
Oporto, red ,,	25	0	..	27	0	29	0	..	30	0
Sicily .... ,,	45	0	..	50	0	50	0	..	55	0
Naples, white ,,	60	0	..	65	0	60	0	..	70	0
Florence, white	70	0	..	75	0	75	0	..	80	0
,, red ,,	60	0	..	65	0	65	0	..	70	0
Bologna, white ,,	0	0	..	80	0	78	0	..	80	0
Ashes (*see* Potash and Soda)										
Bleaching powd..per cwt.	10	9	..	11	0	14	0	..	14	6
Borax, crude .... ,,	25	0	..	40	0	52	6	..	62	6
(Tincal) .. ,,	35	0	..	50	0	47	6	..	60	0
British refnd. ,,	60	0	..	0	0	65	0	..	67	0
Calomel ....per lb.	2	5	..	0	0	2	5	..	0	0
Copper:										
Sulphate ......per cwt.	24	0	..	24	6	25	0	..	26	0
Copperas, green ..per ton	55	0	..	60	0	55	0	..	57	6
Corrosive Sublimate..p.lb.	1	11	..	0	0	1	11	..	0	0
Cr. Tartar, French, p. cwt.	83	0	..	34	0	84	0	..	0	0
Venetian grey ,,	67	6	..	70	0	75	0	..	0	0
brown ,,	62	6	..	75	0	70	0	..	72	6
Epsom Salts ....per cwt.	8	0	..	8	6	8	6	..	9	0
Glauber Salts .... ,,	5	6	..	6	0	5	6	..	0	0
Lime:										
Acetate, white, per cwt.	13	0	..	21	6	10	0	..	13	0
Magnesia:										
Carbonate...... ,,	42	6	..	0	0	42	6	..	45	0
Potash:										
Bichromate ....per lb.	0	5	..	0	0	0	5	..	0	5½
Carbonate:										
Potashes, Canada, 1st sort ......per cwt.	32	6	..	0	6	32	6	..	0	0
Pearlashes, Canada, 1st sort ......per cwt.	33	0	..	33	6	45	0	..	0	0
Chlorate ....per lb.	1	0½	..	1	1	1	0	..	1	0½
Hydriodate (*see* Potassium, Iodide)										
Muriate (*see* Potassium, Chloride)										
Prussiate ......per lb.	1	0	..	1	0½	1	0¾	..	1	0
red .... ,,	1	9½	..	1	10	1	9½	..	1	10
Tartrate (*see* Argol and Cream of Tartar)										
Potassium:										
Chloride ......per cwt.	8	3	..	8	6	8	0	..	8	6
Iodide.......... per lb.	12	6	..	0	0	12	0	..	0	0
Quinine:										
Sulphate, British, in bottles ...... per oz.	4	9	..	0	0	4	6	..	4	9
Sulphate, French ,,	4	4	..	0	0	4	3	.	4	4
Sal Acetos ....per lb.	0	10½	..	0	0	0	11	.	0	0
Sal Ammoniac, Brit. cwt.	34	0	..	35	0	34	6	..	35	0
Saltpetre:										
Bengal, per cent. or under ......per cwt.	19	3	..	19	6	18	0	..	18	6
Bengal, over 6 per cent. per cwt.	18	0	..	19	0	17	0	..	17	6
Madras........ ,,	17	6	..	18	6	10	5	..	17	6

	1868.					1867.				
Saltpetre, *continued*:—	s.	d.		s.	d	s.	d.		s.	d
Bomb & Kurrachee p.ct.	0	0	to	0	0	14	0	to	16	0
European...... ,,	0	0	..	0	0	21	6	..	22	0
British, refined ,,	23	6	..	21	0	22	6	..	23	0
Soda:										
Bicarbonate.... ,,	11	0	..	0	0	15	0	..	15	6
Carbonate:										
Soda Ash....per deg.	0	1¾	..	0	2	0	2¼	..	0	2½
Soda Crystals per ton.	02	6	..	0	0	112	6	..	0	0
Hyposulphite..per cwt.	22	0	...	0	0	22	0	..	0	0
Nitrate .... ,,	13	3	..	13	0	11	0	..	13	0
Sugar of Lead, White, cwt.	37	6	..	38	0	37	6	..	38	0
Brown .... ,,	26	0	..	27	0	28	0	..	29	0
Sulphur (*see* Brimstone)										
Verdigris .... per lb.	0	11	..	1	0	0	11	..	1	0
Vermilion, English..per lb.	2	6	.	3	0	2	0	..	3	2
China.... ,,	2	6	..	2	8	2	0	..	0	0
DRUGS.										
Aloes, Hepatic....per cwt.	100	0	..	180	0	80	0	..	180	0
Socotrine .. ,,	170	0	..	300	0	180	0	..	200	0
Cape, good.. ,,	28	0	..	31	0	30	0	..	33	0
Inferior ,,	16	0	..	27	0	18	0	..	29	0
Barbadoes ,,	70	0	..	205	0	80	0	..	260	0
Ambergris, grey ....per oz.	30	0	..	35	0	35	0	..	40	0
BALSAMS—										
Canada .... per lb.	1	3	..	0	0	1	4	..	1	5
Capivi .... ,,	1	8	..	1	8½	1	0	..	1	7
Peru .... ,,	8	0	..	0	0	0	0	..	0	9
Tolu .... ,,	2	8	..	0	0	2	2	..	2	3
BARKS—										
Canella alba ....per cwt.	30	0	..	38	0	32	0	..	33	0
Cascarilla........ ,,	23	0	..	33	0	16	0	..	28	0
Peru, crown & grey per lb.	0	9	..	1	8	1	4	..	2	0
Calisaya, flat ,,	2	6	..	2	11	2	0	..	2	0
quill ,,	2	4	..	2	8	2	3	..	2	6
Carthagena ,,	0	9	..	1	3	0	10	..	1	4
Pitayo .... ,,	0	8	..	1	3	0	0	..	1	8
Red .... ,,	1	9	..	6	0	2	6	..	12	0
Bucho Leaves ...... ,,	0	3	..	0	0	0	2½	..	0	9
Camphor, China.. per cwt.	130	0	..	132	6	140	0	..	0	0
Japan ,,	130	0	..	132	6	142	6	..	0	0
Refin Eng. per lb.	1	9	..	0	0	1	10½	..	1	11
Cantharides ...... ,,	2	2	..	0	0	2	4	..	2	5
Chamomile Flowers p. cwt	55	0	..	100	0	50	0	..	05	0
Castoreum .... per lb.	5	0	..	32	0	1	0	..	20	0
Dragon's Blood, reed p. ct.	190	0	..	220	0	200	0	..	220	0
lump ,,	100	0	..	220	0	90	0	..	280	0
FRUITS AND SEEDS (*see also* Seeds *and* Spices)										
Anise, China Star pr cwt.	85	0	..	90	0	120	0	..	0	
German, &c. ,,	34	0	..	41	0	30	0	..	42	0
Beans, Tonquin .. per lb.	1	2	..	1	6	1	0	..	1	9
Cardamoms, Malabar good ,,	8	0	..	8	9	6	0	..	6	9
inferior ,,	5	3	..	7	0	4	0	..	5	10
Madras ,,	5	6	..	8	6	3	9	..	5	9
Ceylon ,,	2	6	..	2	10	2	6	..	3	0
Corozo Nuts.... per cwt.	12	0	..	16	0	8	0	..	16	6
Cassia Fistula.. ,,	15	0	..	33	0	20	0	..	32	0
Castor Seeds .. ,,	11	0	..	12	0	10	0	..	12	0
Cocculus Indicus ,,	22	0	..	26	0	30	0	..	35	0
Colocynth, apple.. per lb.	0	6½	..	0	10	0	7	..	0	11
Croton Seeds .. per cwt.	30	0	..	105	0	100	0	..	125	0
Cubebs .... ,,	40	0	..	0	0	50	0	..	52	0
Cummin........ ,,	21	0	..	28	0	17	0	..	20	0
Dividivi .... ,,	10	6	..	12	6	11	0	..	13	0
Fenugreek...... ,,	11	0	..	12	0	10	0	..	0	0
Guinea Grains .. ,,	45	0	..	46	0	56	0	..	53	0
Juniper Berries ,,	9	0	..	10	0	8	6	..	10	0
Myrobalans .... ,,	11	0	..	15	6	11	0	..	16	6
Nux Vomica.... ,,	10	0	..	13	0	13	0	..	15	0
Tamarinds, East India ,,	25	0	..	31	0	27	0	..	27	6
West India, new ,,	25	0	..	35	0	21	0	..	27	0
Vanilla, large .... per lb.	9	0	..	14	0	10	0	..	16	0
inferior ,,	3	0	..	8	0	4	0	..	0	0
Wormseed per cwt.	1	6	..	0	0	5	6	..	6	0
Ginger, Preserved, in bond (duty 1d. per lb.) per lb.	0	6	..	0	10	0	10	..	1	0
Gums (*see separate list*)										
Honey, Narbonne ,,	0	0	..	0	0	50	0	..	70	0
Cuba .... ,,	21	0	..	36	0	26	0	..	41	0
Jamaica.. ,,	25	0	..	43	0	20	0	..	42	0
Ipecacuanha .... ,,	5	3	..	0	0	7	6	..	0	0
Isinglass, Brazil . ,,	3	0	..	3	11	2	0	..	3	10
Tongue sort ,,	3	0	..	4	0	3	0	..	4	2
East India ,,	2	3	..	4	4	1	10	..	4	2
West India ,,	4	2	..	4	9	3	10	..	4	4
Russ. long staple	8	0	..	9	0	9	6	..	10	6
,, leaf ,,	5	6	..	8	6	7	0	..	10	0
,, Simovia	1	6	..	2	6	1	9	..	2	6
Jalap, good ...... ,,	3	9	..	4	6	4	4	..	5	0
infer. & stems ,,	0	6	..	3	6	0	9	..	3	10
Lemon Juice ... per degree	0	1	..	0	1½	0	0¾	..	0	0¾
Liquorice, Spanish per cwt.	65	0	..	70	0	05	0	..	70	0
Italian ,,	50	0	..	60	0	50	0	..	60	0
Manna, flaky .... ,,	3	0	..	3	6	3	9	..	4	3
small...... per lb.	1	6	..	1	9	1	6	..	2	6
Musk.............. per oz.	22	0	..	30	0	19	0	..	35	0
OILS (*see also separate List*)										
Almond, expressed per lb.	1	7	..	0	0	1	8	..	0	0
Castor, 1st pale .... ,,	0	6	..	0	6½	0	7	..	0	9
second .... ,,	0	5	..	0	5½	0	0½	..	0	6¾
infer. & dark ,,	0	4¾	..	0	5	0	6¼	..	0	6½
Bombay (in casks)	0	4½	..	0	0	0	5½	..	0	6
Cod Liver ......per gall	4	0	..	6	0	4	3	..	6	3
Croton............per oz.	1	2	..	1	6	1	2	..	1	6
Essential Oils:										
Almond ....per lb.	40	0	..	0	0	31	0	..	38	0

	1868.					1867.				
Essential Oils, *continued*:—	s.	d.		s.	d.	s.	d.		s.	d.
Aniso-seed ...... per lb	9	0	to	0	0	11	9	to	12	0
Bay .... per cwt.	75	0	..	0	0	80	0	..	60	0
Bergamot ...... per lb.	12	0	..	20	0	10	0	..	16	0
Cajeput, (in bond) per oz.	0	1¾	..	0	2	6	2	..	0	2½
Caraway .... per lb.	5	0	..	6	6	5	0	..	6	6
Cassia .... ,,	5	9	..	6	0	6	6	..	6	8
Cinnamon ...... per oz.	1	0	..	3	6	1	8	..	3	6
Cinnamon-leaf .. ,,	0	1½	..	0	2	0	4	..	0	0
Citronelle ...... ,,	0	2¾	..	0	2⅝	0	2¾	..	0	0
fine.... ,,	0	3½	..	0	0	0	4¾	..	0	0
Clove............ per lb.	2	6	..	0	0	2	7	..	0	0
Juniper .... ,,	1	9	..	2	0	1	6	..	1	9
Lavender........ ,,	2	0	..	3	9	2	9	..	3	9
Lemon.......... ,,	3	1	..	7	0	5	0	..	9	0
Lemongrass .... per oz.	0	4½	..	0	5	0	7	..	0	7½
Neroli .... ,,	0	0	..	0	0	8	6	..	4	6
Nutmeg .... ,,	0	4	..	0	8	0	3	..	0	7
Orange.......... per lb.	5	0	..	7	0	5	0	..	7	6
Otto of Roses.... per oz.	15	0	..	20	0	17	0	..	21	9
Peppermint:										
American .... per lb.	21	0	..	23	0	21	0	..	21	6
English ...... ,,	38	0	..	43	0	38	0	..	44	0
Rosemary ...... ,,	1	9	..	2	0	1	9	..	2	0
Sassafras........ ,,	3	0	..	4	0	3	0	..	3	3
Spearmint ...... ,,	12	0	..	24	0	16	0	..	25	0
Thyme.......... ,,	1	10	..	4	0	2	0	..	4	0
Mace, expressed .. per oz.	6	0¾	..	0	2½	0	0	..	0	7
OPIUM, Turkey ...... ,,	24	0	..	27	0	17	0	..	18	0
Egyptian .... ,,	0	0	..	0	0	3	6	..	7	0
QUASSIA (bitter wood) per ton	125	0	..	140	0	110	0	..	120	0
RHUBARB, China, good and fine .... per lb.	5	3	..	9	0	5	3	..	9	0
Good, mid. to ord. ,,	1	4	..	4	0	1	6	..	5	0
Dutch trimmed ,,	10	0	..	12	0	10	0	..	12	0
Russian .... ,,	9	0	..	10	0	9	0	..	10	0
ROOTS—										
Calumba .... per cwt.	26	0	..	40	0	20	0	..	35	0
China .... ,,	30	0	..	35	0	20	0	..	30	0
Galangal .... ,,	16	0	..	19	0	13	0	..	14	0
Gentian .... ,,	10	0	..	17	0	16	0	..	0	0
Hellebore ...... ,,	22	0	..	30	0	26	0	..	32	0
Orris............ ,,	36	0	..	42	0	34	0	..	35	0
Pellitory .... ,,	58	0	..	60	0	58	0	..	60	0
Pink.............. per lb.	0	7	..	0	9	0	10	..	0	11
Rhatany.......... ,,	0	4	..	0	10	0	7	..	1	0
Seneka........... ,,	1	7	..	0	0	1	9	..	1	10
Snake .... ,,	1	9	..	0	0	3	0	..	0	0
SAFFRON, Spanish .. ,,	28	0	..	35	0	34	0	..	36	0
SALEP .... per cwt.	90	0	..	110	0	110	0	..	120	0
SARSAPARILLA, Lima per lb.	0	0	..	0	0	1	0	..	1	4
Para.............. ,,	0	0	..	0	0	0	11	..	1	1
Honduras .... ,,	0	10	..	1	4	0	10	..	1	4
Jamaica .... ,,	1	0	..	2	0	1	0	..	2	1
SASSAFRAS .... per cwt.	15	0	..	0	0	10	0	..	0	0
SCAMMONY, Virgin .. per lb.	28	0	..	35	0	30	0	..	40	0
second & ordinary ,,	10	0	..	23	0	12	0	..	23	0
SENNA, Bombay .... ,,	0	3	..	0	5½	0	2½	..	0	4
Tinnivelly .... ,,	0	2½	..	0	10	0	2½	..	6	9
Alexandria........ ,,	0	5½	..	0	11½	0	5	..	0	0
SPERMACETI, refined.. ,,	1	6	..	0	0	1	2	..	0	0
American .... ,,	1	5	..	0	0	1	6	..	0	0
SQUILL.............. ,,	0	1	..	0	2	0	1	..	6	2½

GUMS.

AMMONIAC, drop .. per cwt.	200	0	..	240	0	200	0	..	220	0
lump .. ,,	140	0	..	180	0	100	0	..	170	0
ANIMI, fine washed ,,	210	0	..	230	0	210	0	..	220	0
bold scraped ,,	190	0	..	215	0	150	0	..	200	0
sorts ...... ,,	115		..	185	0	100	0	..	147	0
dark ...... ,,	70	0	..	100	0	72	0	..	100	0
ARABIC, E. I., fine pale picked .. ,,	80	0	..	85	0	84	0	..	90	0
srts, gd. to fin ,,	55	0	.	75	0	73	0	..	84	0
garblings.. ,,	40	0	..	50	0	68	0	..	70	6
TURKEY, pick. gd to fin. ,,	170	0	..	210	0	190	0	..	225	0
second & inf. ,,	85	0	..	160	0	85	0	..	170	0
in sorts .. ,,	63	0	..	84	0	70	0	..	90	0
Gedda.... ,,	47	0	..	57	0	62	0	..	65	0
BARBARY, white .. ,,	60	0	..	70	0	82	6	..	0	0
brown .. ,,	75	0	..	80	0	85	0	..	0	0
AUSTRALIAN ...... ,,	36	0	..	50	0	65	0	..	73	0
ASSAFŒTIDA, com. to gd ,,	55	0	..	100	0	50	0	..	90	0
BENJAMIN, 1st qual. ,,	440	0	..	060	0	500	0	..	660	0
2nd ,, ,,	280	0	..	420	0	300	0	..	520	0
3rd ,, ,,	60	6	..	360	0	100	0	..	300	0
COPAL, Angola, red ,,	60	0	..	70	0	66	0	..	70	0
Benguela .. ,,	70	0	..	84	0	62	6	..	75	0
Sierra Leone.. per lb.	0	7½	..	1	3	0	4½	..	1	0
Manilla .... per cwt.	28	0	..	45	0	22	6	..	45	0
DAMMAR, pale .... ,,	90	0	..	100	0	65	0	..	75	0
EUPHORBIUM ...... ,,	13	6	..	19	0	17	6	..	19	6
GALBANUM .... ,,	260	6	..	280	0	240	0	..	280	0
GAMBOGE, pckd pipe ,,	300	0	..	320	0	380	0	..	420	0
in sorts.. ,,	240	6	..	200	0	220	0	..	300	0
GUAIACUM .... per lb.	0	6	..	2	0	1	0	..	2	6
KINO.............. per cwt.	100	0	..	150	0	164	0	..	240	0
KOWRIE, rough.... ,,	36	0	..	45	0	31	0	..	40	0
scraped .. ,,	45	0	..	100	0	42	0	..	75	0
MASTIC, picked...... per lb.	5	0	..	7	0	5	0	..	6	0
MYRRH, gd & fine per cwt.	170	0	..	250	0	150	0	..	180	0
sorts......	80	0	..	140	0	80	0	..	140	0
OLIBANUM, p. sorts	80	0	..	82	0	72	6	..	80	0
amber & ylw.	60	0	..	82	0	70	6	..	75	0
garblings :.. ,,	25	0		47	0	23	0	..	40	0
SENEGAL .... per cwt.	80	0	..	85	0	90	0	..	95	0
SANDARAC .... ,,	82	6	..	107	0	80	0	..	95	0

	1868.					1867.				
Gums, *continued* :—	s.	d.		s.	d.	s.	d.		s.	d.
THUS.............. ,,	13	0	to	14	0	15	0	to	17	0
TRAGACANTH, leaf.. ,,	220	0	..	289	0	220	0	..	320	0
in sorts ,,	160	0	..	220	0	80	0	..	205	0

OILS.

	£	s.		£	s.	£	s.		£	s.
SEAL, pale.......... per tun	36	0	..	0	0	39	0	..	40	0
yellow to tinged ,,	32	6	..	35	0	35	0	..	37	0
brown........ ,,	31	0	..	0	0	36	0	..	37	0
SPERM, body ...... ,,	99	10	..	0	0	103	0	..	105	0
headmatter ,,	0	0	..	0	0	103	0	..	0	0
COD.................. ,,	37	0	..	0	0	38	10	..	39	0
WHALE, South Sea, pale ,,	38	0	..	40	0	38	10	..	40	0
yellow ,,	37	0	..	39	0	38	0	..	0	6
brown ,,	33	0	..	0	0	35	6	..	36	6
East India, Fish ,,	32	0	..	0	0	35	6	..	0	0
OLIVE, Gallipoli ...... ,,	68	0	..	69	0	70	6	..	0	0
Trieste ...... ,,	68	0	..	0	0	69	0	..	0	0
Levant ...... ,,	63	0	..	0	0	61	0	..	0	6
Mogador...... ,,	62	0	..	0	0	62	0	..	0	0
Spanish ...... ,,	67	0	..	68	0	67	0	..	68	0
Sicily .... ,,	60	0	..	6	0	68	6	..	0	0
COCOANUT, Cochin.. per ton	53	0	..	0	6	57	0	..	0	0
Ceylon.. ,,	51	0	..	0	0	52	0	..	52	10
Sydney ,,	45	0	..	50	0	44	0	..	51	0
GROUND NUT AND GINGELLY:										
Bombay	0	0	..	6	0	50	0	..	0	0
Madras................	40	0	..	41	0	54	0	..	55	6
PALM, fine	42	0	..	0	0	40	0	..	49	10
LINSEED	29	0	..	30	0	39	0	..	39	10
RAPESEED, English, pale ..	33	10	..	0	0	40	0	..	40	10
brown........	31	10	..	0	0	38	0	..	0	0
Foreign pale....	34	0	..	35	10	42	0	..	0	0
brown........	31	10	..	0	0	38	10	..	39	0
COTTONSEED	30	0	..	38	0	33	10	..	29	0
LARD........................	67	0	..	70	0	57	0	..	0	0
TALLOW	37	0	..	0	0	36	0	..	38	0
PETROLEUM, Crude	12	0	..	0	0	11	10	..	0	0
	s.	d.		s.	d.	s.	d.		s.	d.
refined, per gall.	1	5½	..	0	0	1	7	..	0	0
Spirit ,,	1	1	..	0	0	1	1	..	1	3

SEEDS.

	s.	d.		s.	d.	s.	d.		s.	d
CANARY .... per qr.	76	0	..	84	0	56	0	..	58	0
CARAWAY, English per cwt.	0	0	..	0	0	0	0	..	0	0
German, &c.....	30	0	..	42	0	40	0	..	44	0
CORIANDER	18	6	..	20	0	0	0	..	6	0
HEMP .... per qr.	42	0	..	44	0	44	0	..	46	0
LINSEED, English per qr ..	65	0	..	72	6	0	0	..	0	0
Black Sea & Azof	60	0	..	61	6	63	6	..	0	0
Calcutta ,,	62	6	..	63	0	68	0	..	69	0
Bombay ,,	63	0	..	64	6	69	0	..	0	0
St. Petrsbrg. ,,	56	0	..	59	6	0	6	..	0	0
Mustard, brown.. per bshl.	0	0	..	0	0	0	0	..	0	0
white.. ,,	12	0	..	13	0	0	0	..	6	0
POPPY, East India per qr,	57	0	..	55	0	0	0	..	0	0

SPICES.

CASSIA LIGNEA .... per cwt.	130	0	..	140	0	103	0	..	111	0
Vera .... ,,	60	0	..	84	0	47	0	..	62	0
Buds .... ,,	140	0	..	155	0	130	0	..	150	0
CINNAMON, Ceylon, 1st quality .... per lb.	2	3	..	3	5	2	10	..	2	1
2nd do. ...... ,,	1	10	..	2	6	1	7	..	2	8
3rd do. ...... ,,	1	6	..	2	7	1	3	..	2	0
Tellicherry ...... ,,	1	9	..	2	2	1	7	..	1	11
CLOVES, Penang.... ,,	0	10	..	0	11	0	10	..	1	0
Amboyna........ ,,	0	4¾	..	0	5¾	0	5¼	..	0	0
Zanzibar .... ,,	0	3½	..	0	4	0	3⅝	..	0	3½
GINGER, Jam., fine per cwt.	90	0	..	200	0	120	0	..	180	0
Ord. to good .. ,,	36	0	..	80	0	42	0	..	110	0
African.......... ,,	23	6	..	29	0	28	6	..	29	0
Bengal .... ,,	26	0	..	23	0	27	0	..	27	5
Malabar .... ,,	0	0	..	0	0	28	6	..	0	6
Cochin .... ,,	42	0	..	116	0	58	0	..	120	0
PEPPER, Blk. Malabar, per lb.	0	4¼	..	0	5	0	4	..	0	4
White, Tellicherry ,,	0	10	..	1	6	0	9	..	1	9
Cayenne .... ,,	0	4	..	0	9	0	4½	..	0	[illegible]

VARIOUS PRODUCTS.

COCHINEAL—										
Honduras, black .. per lb.	3	2	..	4	5	3	3	..	4	4
,, silver .. ,,	2	9	..	3	0	3	1	..	3	10
,, pasty .. ,,	1	7	..	2	7	1	9	..	3	0
Mexican, black .... ,,	3	1	..	3	3	3	0	..	3	5
,, silver .... ,,	2	11	..	3	1	3	3	..	3	4
Teneriffe, black.... ,,	3	2	..	4	8	3	3	..	5	[illegible]
,, silver.... ,,	3	0	..	3	5	3	0	..	3	6
GLUE, Town...... per cwt.	40	0	..	60	6	42	0	..	62	0
French ...... ,,	62	0	..	0	6	52	0	..	64	0
GUANO—										
African, &c....... per ton.	0	0	..	0	0	70	0	..	110	0
Peruvian .... ,,	12	10	..	0	0	240	6	..	0	0
LAC, SHELLAC, orange p. cwt.	75	0	..	90	0	72	0	..	87	6
Liver & nat. orange ,,	60	6	..	76	0	53	6	..	70	0
Garnet............ ,,	55	0	..	60	0	52	6	..	59	0
Button, dark to mid. ,,	55	0	..	80	6	54	0	..	77	6
Good and fine .. ,,	85	0	..	115	6	80	0	..	90	0
SEEDLAC.......... ,,	50	0	..	65	0	70	0	..	95	0
STICKLAC .... ,,	60	0	..	70	0	40	0	..	63	0
PUMICE STONE .. per ton	120	0	..	160	0	120	0	..	160	0
SOAP, Castile .... per cwt.	38	0	..	39	0	0	0	..	0	0
Marseilles.... ,,	40	6	..	0	0	40	0	..	42	0
SPONGE, Turk. fin pkd pr lb.	12	0	..	14	0	12	0	..	14	0
Fair to good .. ,,	5	0	..	11	6	5	0	..	11	0
Ordinary...... ,,	2	0	..	4	0	2	0	..	6	0
Bahama	0	10	..	2	6	0	8	..	1	9